

MONTANA

MARCH / APRIL 1976

SIXTY CENTS



OUTDOORS



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the cover

Decades ago, Chief Seattle had some excellent advice for America. But apparently, we didn't listen. Perhaps his message will have more meaning today. See page 15. Front cover—F&G photo by Bill Schneider. The back cover is courtesy of the National Wildlife Federation in honor of National Wildlife Week, March 14-20.

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Montana Outdoors is published six times each year (January, March, May, July, September and November) by the Montana Department of Fish and Game. Contributors (manuscripts or illustrations) are welcome with the understanding that the department or the editor cannot be responsible for loss or damage. All contributions will be published at the discretion of the editor. Subscription rates are \$3 for one year, \$5.50 for two years, \$8 for three years and \$2.50 for each additional year. Individual copies are available at newsstands and regional department offices. Price per copy is 60 cents. Although Montana Outdoors is copyrighted, permission to reprint articles is available by writing our office or phoning us at 406-449-2474. All correspondence should be addressed: Montana Outdoors, Department of Fish and Game, 125 Roberts; Helena, MT 59601

POSTMASTER—Montana Outdoors is entered as second class mail in Helena, MT 59601. Additional entry is in Butte, MT 59701.

a livable environment for WILDLIFE is a quality environment for MAN



WHY BUY A SPORTSMAN'S LICENSE?

The department has sold a sportsman's license for many years. However, sales haven't been earthshaking, to say the least.

Unfortunately, I suppose it's mostly a matter of economics. Hunters and fishermen can get by for less by buying the licenses individually. It's more convenient to buy the combination license, but nonetheless more costly. More important, those buying the licenses individually to save money may be missing the significance of the sportsman's license.

This combination license is more than a handful of permits. It's part of a *cause*—landowner/recreationist relations. As we've stressed so many times, this issue concerns us greatly. So we devote much of our effort to improving or maintaining this necessary relationship. And the sportsman's license pays part of the bill.

That extra \$4 or \$5 goes for landowner/recreationist programs such as (1) setting up a mobile exhibit at fairs and other community events all across the state, (2) honoring seven landowners annually as "Landowners of the Year" for their outstanding efforts in improving this relationship, (3) working out cooperative agreements with individuals or groups of landowners, (4) encouraging better relations through TV and radio programs, magazine articles, news releases and public appearances, (5) promoting good relations on several fronts through the diverse "3-C" program—courtesy, consideration and common sense and (6) providing a plastic litter bag for landowners to hand out free when hunters or fishermen ask permission to use their land. (The litter bag is partly funded by the Montana Stockgrowers Assn. This department and stockgrowers have common concerns in this area, so we've locked arms in this effort by jointly funding the litter bag.)

Sportsman's license buyers receive a special decal for their vehicles to identify them as people who care about landowners and their problems. And the licenses are consecutively numbered, so the same license can be reassigned year after year.

But what does having a sportsman's license *really* mean? It means you are one of those who *really cares* about hunting and fishing and is willing to lay out a few extra bucks to make his feelings known. And at the same time, you're actually *doing something* about landowner/recreationist relations, instead of merely just wondering why somebody else doesn't do something about it. 🐾

Wes Woodgerd, Director
Department of Fish and Game



Merriam's turkey photo by Jan Cotes

THE AMERICAN EMBLEM THAT ALMOST WAS

by Ken Walcheck

AS YOU work your turkey yelper in the predawn chill, a shiver of excitement races through your body as you hunker behind a lichen-splotched log. Suddenly, the electrifying rattle of a gobbling tom reverberates through the pine-studded hills. Your body's functions become finely attuned as adrenalin surges through your arteries.

Then it happens.

One of nature's greatest sights materializes out of a wooded draw—a strutting tom, taking short steps,

with wings low and tail fanned out, high and colorful.

There's no experience on earth like that of calling up a tom turkey. It quickly becomes an addiction more binding than barbiturates, more tenacious than the craving for alcohol, more serious than an academic course in aerodynamics. People occasionally overcome these latter afflictions. Nobody has ever gotten over the obsession of stalking the wild gobbler.

Largest of the upland game birds, the turkey (*Meleagris gallopavo*) has been exquisitely designed by nature. In appearance and versatility, it takes a back seat to none of the 650 species of birds found in North America. Indeed, specifications for this streamlined version of the barnyard tom turkey would be a best seller in any locality:

- Plumage iridescent and metallic colored like a prized, old Hawken rifle barrel. A geisha-like bronzed fan on one end and a coarse "beard" springing from the breast on the other end. Head naked; bluish with red wattles (fleshy, wrinkled pieces of skin which hang from the turkey's chin) that become gorged with blood and resemble quivering flaming cravats during flamboyant courtship rituals. Height 3 feet, wingspan to 3½ feet, weight to 35 pounds.

- "Eagle-eyed" vision with computerized eyes that detect direction, distance, size, shape, brightness, color hue, color intensity, three-dimensional depth and motion of an object.

- Vocabulary profuse with a wide repertoire of calls: the whistle or "Kee, kee, kee" of the very young bird, the alarm "putt" or "pert," the "keouk" yelp, the "cluck," the guttural roost call and the mature male's gobble.

- Appetite voracious with a foraging flock scratching for cereal grains, picking up grasshoppers and beetles, eating seeds, fruits, berries and pine seeds, plus a wide variety of other foods.

- Capable of racing on powerful legs at bursts of 25 miles per hour. Strong fliers that can flush like a grouse, clear treetops and glide on set wings at 50 miles per hour for a mile or more.

ALL-AMERICAN BIRD

Although the wild turkey falls into the "all-American" classification as our symbol of Thanksgiving, a generous sprinkling of speculation still exists about the origin of its name. History points out two possible explanations, one geographic and the other etymological, a method of tracing a word's derivation.

When the early Spanish conquistadors returned from the New World in the first part of the 16th century, one of their "prizes" was live turkeys that Mexican Indians domesticated from wild stock. The big birds, with their princely strut and metallic feathers, closely resembled the peafowl and guinea fowl, both of which were introduced to Europe from Asia Minor, much of which was then known as "Turkey." This provides one possibility for the historical origin of the name.

Other early naturalists thought of the turkey as a native of India. For example, in his book, "Gifts of the Americas: the Turkey," S. Podolsky refers to the Tamil language of India where one can find the word "toka," meaning train or trailing skirt. Adapted into Hebrew, "toka" becomes "tukki." From here we can effortlessly take one more step to the anglicized word turkey.

Turkeys, members of the Family Meleagrididae, originated in the late Pliocene geological period, some 10 million years ago. Fossil evidence suggests that the species we know as the wild turkey probably was confined to the same geographic ancestral range which it has occupied during historic times.

Although Montana falls outside the turkey's ancestral range, some questionable archaeological evidence suggests turkeys existed in certain mountain pine woodland areas in the eastern part of the state during prehistoric times. As reported in the Wildlife Society's book, "The Wild Turkey and its Management," fragmentary remains of "turkey" bones were found at the Hagan archaeological site in central eastern Montana near Glendive and at the Pictograph Cave in south central Montana near Billings.

Because the turkey's broad distribution includes a diversity of habitat types, six different races (forms that do not differ enough to be termed distinct species) are recognized in North America:

- (1) The Eastern turkey ranges through the deciduous forests of 24 states east of Montana.

- (2) The Florida turkey dwells in the broad-leaved and pine forests of peninsular Florida.

- (3) The Rio Grande race inhabits the mesquite and live oak thickets of the southern Great Plains, south to northwestern Mexico.

- (4) Gould's turkey flourishes in the mountain pine, oak and juniper growths of the Sierra Madre in northeastern Mexico.

- (5) The Mexican turkey wings through the tropical deciduous and adjoining mountain forests in southern Mexico.

- (6) The Merriam's turkey resides in the mountain pine woodlands of the Rocky Mountains, from Montana to Arizona.

Although the history text we consulted didn't mention it, Benjamin Franklin campaigned vigorously to make the wild turkey our national bird. He didn't succeed, but he came close—the bald eagle beat out the turkey by one vote and became our national emblem.

THE TURKEY'S FALL AND RISE

Despite its lofty stature, history points out that the turkey experienced its share of hard times. Because encroaching civilization interfered with its habitat, the turkey suffered, like many of our wildlife species. The advancing flock of opportunists was eager to tap and harness the infinite resources that meant progress and profit. In a relatively short time, the turkey's range was reduced to one-tenth its original size and by 1900, only token populations remained. By 1920, the turkey had disappeared from nearly all of the 38 states it originally inhabited.

The wild turkey's restoration can be attributed partly to its tenacity and adaptability, but most credit goes to sportsmen who underwrote its salvation. For the first time, the hunter learned to be

continued



The distribution of turkeys in Montana.

more than a muddled and harassed cog in the wheel of progress. As a consumptive user of the resource, he learned how to sway cultural and governmental policies to bring about habitat management, better protection, restocking programs and the necessary injection of state and federal monies. As a result, the turkey rebounded and exceeded the most optimistic hopes of wildlife biologists. Now, a self-sustaining game bird population has been restored to most of its original territory, as well as to several states beyond its ancestral range. Its resurgence is a tribute to conscientious wildlife management. Today, turkeys inhabit 42 states and numbers continue to grow.

Introduction of turkeys into Montana was spearheaded by sportsmen's clubs in Billings and Forsyth, as well as through independent efforts in the Kalispell area. These early attempts were total failures because the planting stock was not adapted to the rigors of Montana's climate, or perhaps the birds could not adjust to their new habitat.

When the Dept. of Fish and Game decided to introduce turkeys into Montana, it selected the Merriam's as the best choice to achieve success.

In 1954, department biologists introduced 13 Colorado birds into the Judith Mountains of central Montana. A second release was made in 1955 when 18 turkeys from Wyoming were released into the Long Pines area of southeastern Montana. Wyoming stock was also used in the Ashland area of southeastern Montana in 1956 and 1957 when 26 birds were released. This marked the last time stock from outside Montana was transplanted.

Subsequent trapping and relocating distributed turkeys through 33 sites in Montana, with the Long Pines and Roundup areas supplying the bulk of birds and spontaneous emigrations providing satellite populations. At present, the future of the Merriam's turkey in Montana looks very promising.

SOCIAL RANKING LADDER

Turkeys are just like all animals—their behavior patterns are mostly directed toward self-survival and racial survival. A finely tuned, internally directed system of activities strives to maintain the physiological stability of the body in the face of many environmental hazards ranging from a driving

snowstorm to an insidious parasite. For example, the turkey's reproductive behavior tends to guarantee perpetuation of the species. Also, although many paths to survival exist, establishment of a social hierarchy of leaders and subordinates lends further stability to the turkey population.

In a detailed study of a wild turkey population (Rio Grande race) in southeastern Texas, C. Robert Watts (now a biologist for the Montana Dept. of Fish and Game in Lewistown) and Allen W. Stokes found an amazing degree of social stratification among male turkeys. In fact, the ladder was so ironclad that some of the males never had an opportunity to mate.

During the early stages of life, the young male turkey faces many resounding tests before he finally positions himself on the social "ranking" ladder. Watts and Stokes wrote in the June 1971 issue of *Scientific American*, "In the exclusive male winter flock he is forced into two contests: one to establish his position within his own group of siblings, the other to determine the status of his sibling group with respect to other groups. Each sibling engages in physical combat with his brothers. The battle consists in wrestling, spurring in the fighting—cock style, striking with the wings and pecking at the head and neck. The fight often lasts more than two hours, and ends when one or both of the two contestants are too exhausted to continue."

The two writers continued, "The strongest fighter in the group becomes the dominant bird, and the order of rank established among the siblings is seldom challenged thereafter as long as the dominant bird lives. . . . When one flock encounters another, they also fight each other as units, again to determine which will be dominant. As in the case of individual contests, the group battles end in clear-cut decisions that create a remarkably stable society. The vanquished contestants accept their subordinate rank and rarely seek to renegotiate the result unless there is an important change in circumstances such as the death of a leader."

Such an arrangement may seem less than ideal for those outranked males deprived of the opportunity to mate, but the "system" certainly has its merits.

THE PRIDEFUL PROMENADE

The breeding season for the turkey begins in the spring and the dominant toms open courtship, a ritual always flamboyant and occasionally turbulent. A dominant male establishes a territory which is sometimes not clear-cut, but subject to change depending on the availability of hens.

During courtship display, a tom's pigmented and fleshy wattles display a rapidly changing kaleidoscope of color from red to blue, purple and white. The snood, a fleshy conical projection located just above the beak, elongates and inflates during various displays. Pulling back his head, puffing out his chest padded with fat to sustain him through several

weeks of active display and spreading his ornate tail into an elegant fan, he displays himself to any receptive hen.

Morning after morning, the prideful promenade continues. After mating, the hens slip away to lay their eggs, usually selecting brushy cover in broken woodlands or forest. The hen scoops out a shallow depression in the ground and over a two-week period, lays an average of twelve spotted, cream-colored eggs. The tom takes no part in incubation or brood rearing.

The Dept. of Fish and Game initiated an intensive study of the Merriam's turkey in the Long Pines area

during 1961-63. The chief investigator, Dr. Robert Jonas, professor of wildlife management at Washington State College, found that the principal events in the turkey's annual cycle centered around a specific habitat. Ponderosa pine formed one-half of the vegetative cover, with the remainder comprised of grasses, deciduous trees and brush pockets, scattered small openings and finger-like drainage-ways lacing the area. Jonas found that such a combination of elements provided the essentials for a successful turkey population. His research was validated when the original 18 birds in the Long Pines zoomed to an estimated 700 after three

continued

"TALKING TURKEY"

Turkey calls are available in a wide variety of types, sizes and tones. The most popular and easily mastered are the friction types, which include box and slate calls.

The box call features a movable lid or paddle. The sound is produced by stroking the paddle over one of the chalked edges to produce a yelp. You can also grasp the box by the hinged end and "shake" out a reasonable gobbler imitation.



box call

To operate a slate call, scratch a slate with a hardwood peg at a 20-30° angle. It produces all calls except the gobble.



slate call

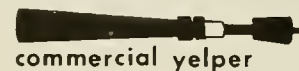
A second group includes calls which operate on air expelled from your lungs. The palate or diaphragm call is a small, horseshoe-shaped piece of metal or plastic covered with a diaphragm of thin rubber. The call is placed inside the mouth and sounds made by breathing over the diaphragm. It takes considerable experience to become proficient with this call, but in the mouth of an expert it really fools turkeys.



diaphragm call

The yelper comes in many versions. The commercial calls usually use hard rubber tubing and a wooden "bell." Effective yelpers can also be made from the smaller of the two bones in the second joint of the hen turkey's wing. Cut off both ends of the bone and thoroughly clean the remaining 3-4 inches on the inside. Insert this section into the end of a larger wing or leg bone and fasten it in place with a suitable plug and adhesive

tape. The wing bone yelper will produce softer and more musical notes than the box, slate or diaphragm calls.



commercial yelper

Regardless of the call, the secret to successful calling centers around practice. Stay with it until you learn to talk the language of the wild turkey.

The art of calling turkeys qualifies as one of the oldest sports of its kind in the U.S. Unless you know the meaning of the gobble, the cluck and the yelp, you can't expect to "talk turkey" in intelligent terms.

•Lost Bird or Come Back Call—This call attracts scattered young turkeys looking for a flock. The call, worth all others put together for hunting young turkeys in the fall, is the fine, whining "kee-kee-kee." The little diaphragm caller, so easy to carry, does an excellent job of imitating the lost bird call.

The lost "kee-kee-kee" call differs somewhat from the whistle of the very young turkey since it is coarser in tone. When properly delivered, the lost or distress call means to a turkey what the distress call of "SOS" means to a sailor.

Since young turkeys do not know the different calls of every young bird in a flock, every one of them can be lured in if the proper kind of call is given. Likewise, the old hen does not know the individual calls of the different members of her brood and she, too, can be called in.

•Feeding Call—This is a soft and timid call, given back and forth among turkeys as they feed. When duplicated by a caller, each note is muffled, short and repeated several times in rapid succession.

•Gobbler Call—Gobblers call to hens and to each other. Gobbler-to-gobbler sounds are made principally in fall, when males run together. The older males are usually in small groups, the spring gobblers in another, often larger. In spring, the mature tom gobbles to the hen. This call often moves a hesitant tom into range because he thinks a rival gobbler has invaded his territory. The gobble can also locate roosting toms. One word of warning: Your gobble may lure another hunter into your territory, so be alert.

•Hen Mating Call—Hens use a come-hither call blended into a combination of clucks and yelps. The frequency, variations and tone of the yelp vary among callers, but usually begin with a lazy, low introductory note then crescendo into a rising scale series of "kee-yuks."

•"Putt" or "Pert" Call—A caller must learn *not* to make this call. The "putt" serves as the danger call given by alarmed turkeys. A false "putt" made on your caller is enough to send a smart turkey over the hill—and all turkeys are smart.



Turkeys in the Missouri River Breaks. F&G photo by Bob Hoy

breeding seasons. In addition, from 1957-65, trapping and hunting removed approximately 1,500 birds from this area.

The department's turkey management program has been an unquestionable success since the first release in 1954. Since our management programs began, we have learned:

(1) Suitable wild turkey habitat in Montana is generally restricted to open ponderosa pine forest in fairly rugged terrain. Most of the ideal areas have received transplants, but remnant islands may support additional small flocks.

(2) The Long Pines study showed that over 50% of the turkey population disappears each year whether hunted or not. Other states report the annual mortality averages between 60-70%.

(3) Spring gobbler seasons are biologically sound and don't affect production or population. Jonas' Long Pines study showed that egg laying occurred between April 10-20 and the beginning of incubation from April 25-May 5. The two-week season, opening on April 15 and May 1 in past years, does not interfere with the turkey's breeding activities which occur earlier. Second, nothing suggests that a large spring gobbler harvest interferes with the reproductive potential of a turkey population. Gobblers are polygamous and dominant males acquire a harem of five or more hens during the season. Therefore, many surplus males, including fertile yearling toms, exist in a flock.

(4) Since the first three-day turkey season in 1958, turkey hunting has provided important recreation for Montana hunters. We now offer 10 weeks of hunting annually and maintain healthy turkey populations. During fall 1974, 1,826 hunters spent an average of approximately three days each hunting turkeys and harvested 873 birds, a success ratio of 48%.

(5) Carter County, in southeastern Montana, provides the bulk of the turkeys harvested in Montana. During the 1972-74 seasons, an average of 339 hunters harvested 158 turkeys each fall with a success ratio of 47%.

(6) Despite the department's success with the Merriam's turkey, no complacency can be allowed in an era where environmental changes have become a way of life. Anyone who flatly states that Montana's land use picture will never change has limited vision, at best. Monitoring such changes and determining how they affect the turkey's future form an important part of the department's management program.

BAGGING THE BEARDED WONDER

Turkey hunting serves as an important facet of life to some gobbler hunters. To others, however, it becomes a burning obsession. To indulge this bizarre passion, the avid turkey hunter forsakes friends, endures agonizing frustrations, risks raising his wife's hackles and gambles with his sanity.

As an old gobbler hunter in southeastern Montana once told me, "I sort of pussyfooted around with those bearded toms for a few years, and then one season, I decided that I was going to quit fooling around and learn how to use a turkey call. That decision cost me a ranch, a bank roll and wife that could whip up a sourdough batter like you wouldn't believe, but right now I'm the best turkey hunter in this part of Montana."

How does one go about bagging a bearded tom? Most good turkey hunters recommend that an experienced hunter sit down and read up on the life history of the wild turkey. A good choice would be the Wildlife Society's book, "The Wild Turkey and its Management" (edited by Oliver H. Hewitt, 1967; available from: The Wildlife Society, 3900 Wisconsin Avenue NW, Suite 176; Washington, D.C. 20016; approximate cost, \$6).

A well-equipped turkey hunter also knows how to use turkey calls, but they present bewildering problems for the beginner. Calls differ widely in appearance and method of operation and have inspired an almost encyclopedic amount of printed instruction. If you start with the standard box call and attempt to run the gamut through all of the calls on the market in one season, you're asking for a case of induced mental derangement. Select a call that fits you and stick with it until you master basic calls.

There are many ways to learn how to call up a tom. Perhaps the best way is learning from the birds

themselves. Nothing sounds more like a turkey than a turkey—so copy their calls. After that, it's a matter of practice and patience. You can also learn by taking lessons from an expert or listening to a good turkey-calling instructional record. Whichever route you choose, remember that turkey calling is an art, and like all arts, it should be practiced largely for its own sake. The greatest satisfaction in calling lies not in bagging a turkey but in outwitting it.

Like most kinds of hunting, a little pre-season scouting goes a long way. This goes hand in hand with reading about the life history of a turkey so that you have a good idea of the bird's habitat, what it eats and what its activities are likely to include during a typical day. Even if you are a top-notch turkey hunter, you can't be certain that last year's hotspot will produce the same brand of hunting it did last year because habitat changes *do* affect turkeys. The wise turkey hunter soon learns that he can never learn enough about turkeys.

Many hunters prefer to use a camouflage head net or to smear their faces and hands with camouflage grease when calling turkeys. Maybe camouflage helps achieve success, but movement really spooks a turkey. Gobblers are wary, suspicious creatures, so sit still!

When using a call, position yourself above or on the same contour as the turkey because it's difficult to call a gobbler downhill. Many hunters also underestimate a turkey's vision, so don't position yourself in a large, open area. A certain amount of ground cover within a forest makes a turkey feel more secure. A good hunter will position himself so that he will be in good gun range when he sees a gobbler.

Most turkey hunters prefer hunting with a shotgun. If you are calling and expect the tom to walk within 30 yards or less, use 6 or 7½ shot. When using smaller shot, aim all shots at the head and neck. The rest of a turkey's body is nothing less than a miniature armored tank. In contrast, if you plan on still-hunting or stalking from a distance of 50-60 yards, use 2 or 4 shot.

Most experts agree that early morning is the best time for taking a gobbler. Most gobbling occurs just after first light. After an early morning bout with the hens, a gobbler's ardor will subside.

What's the most important ingredient for a successful turkey hunt? One word pretty well sums it up—patience. No matter how much turkey savvy you might have, it won't help very much if you can't stick around and put it to good use.

Today, the Merriam's turkey represents one of Montana's most prized upland game birds. The group of black dots moving across a hillside studded with ponderosa pine has become an exciting—and permanent—addition to Montana's wildlife and hunting scene. This serves as a fitting tribute to the sportsmen who worked so hard to insure that introduction of the wild turkey into Montana would be a success. 🦃

SEXING AND AGING A WILD TURKEY

The mature gobbler's typical head adornments and "beard" (a hair-like appendage hanging from the upper breast) serve as good field marks in distinguishing the male from the hen. However, up to 10% of the females possess beards, and secondly, the gobbler's beard and head adornments are not readily visible until his second year. The only sure way to tell a gobbler from a hen is to examine the lower breast feathers. The tips are glossy black in males and white or buffy in females. Glassing turkeys from a distance with binoculars will readily show this difference.

The outer two wing feathers will tell you whether the bird is a juvenile or an adult. If the feathers are sharply pointed and without transverse white bars extending to the tip, the bird is a poult (bird of the year). If the outer feather tips are somewhat rounded, and the white bars extend to the tip, the bird is an adult.



REMEMBER EARTH DAY?

by Donald L. Tennant and Dave Diamond

INTEREST in Earth Day has steadily declined since its inception in 1970. Last year, for example, the President did not even officially proclaim it. But one project born on the original Earth Day is still thriving.

As many as 300 students and 22 teachers from 16 different high schools make annual Earth Week studies of the aquatic environment of the Yellowstone River and its tributaries in south central Montana. Their work documents changes in the various levels of water quality in the Yellowstone River Basin between Bridger and Sidney, Mont. Annual samples of

aquatic invertebrates reveal striking differences in the quality of the running water above and below towns and cities in the watershed. Samples are retained at the various schools for future study and reference. These and subsequent collections will serve as a baseline of environmental health in the event that further population increases and exploitation cause increased pollution.

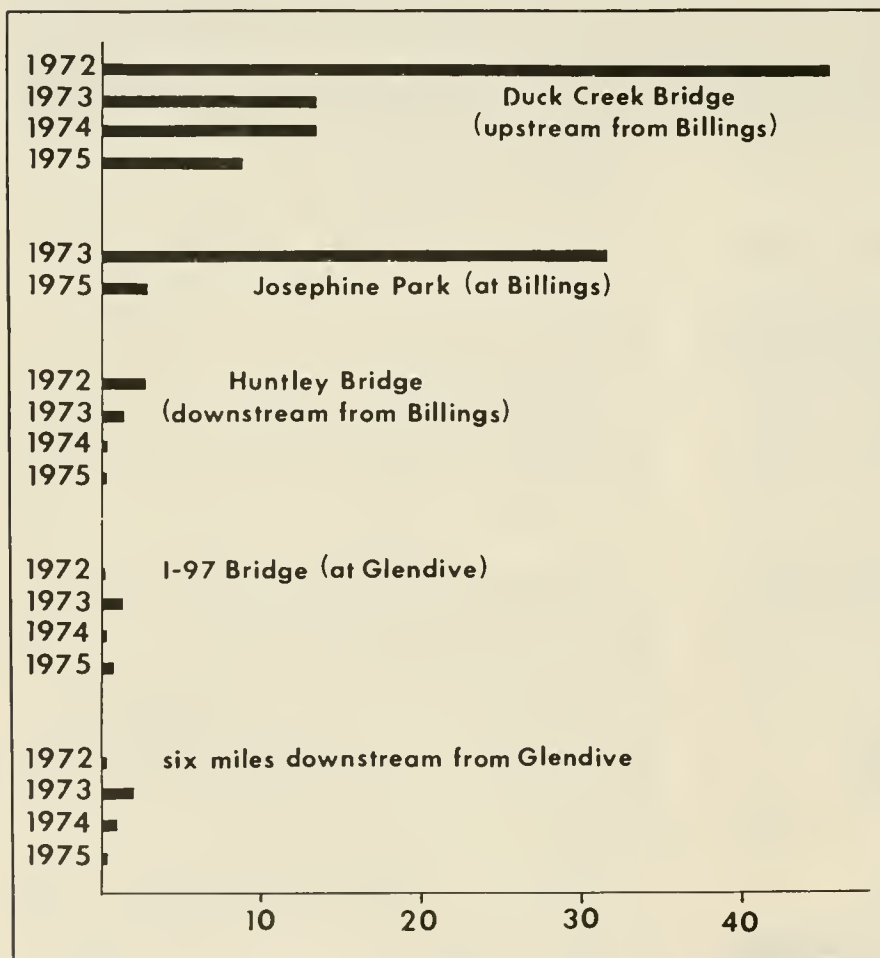
Flowing, meandering streams occupy the lowest surface elevation of any valley. Like giant ribbons of litmus paper, they serve as indicators, reflecting the quality of each basin's environ-

ment for all life forms. In healthy streams, various invertebrates, particularly certain insects, occupy the undersides of submerged rocks. These harmless creatures (often called hellgrammites or scratchers) spend most of their lives in a relatively small area of a stream. Their tolerance—or lack of it—to various pollutants, enables man to use them as biological indicators to monitor short-term or chronic incidents of environmental degradation. These changes would otherwise be very difficult to detect using millions of dollars worth of highly sophisticated equipment and testing around the clock for known physical and chemical parameters of pollution.

Through a process called biological magnification, these same invertebrates rapidly accumulate levels of toxic substances up to several thousand times the concentration dissolved in the surrounding water. This phenomenon reveals the presence of deadly substances such as chlorinated hydrocarbons (DDT) and heavy metals (mercury), that accumulate and persist in the environment over long periods of time. In a sense, the total biomass of invertebrates in a stream is like a great herd of "environmental elephants" working for man.

Guided by their teachers, biology and science students in the Yellowstone Basin continue to sample in the stream the aquatic animals that are recognized as reliable indicators of water quality, when viewed collectively. The students receive sound, practical, relevant environmental training, both in the field and in the lab.

•If your biology class would like to study the life in a stream near your home town, contact Donald L. Tennant, U.S. Fish and Wildlife Service, 711 Central Avenue, Billings, MT 59102, and ask for assistance. —Ed. 🐾



During their study, the students determined the total biomass on selected sites (ten-foot-square plots) along the Yellowstone River. Although this sort of project is excellent for students interested in resource management and environmental quality, the results of this research aren't conclusive. Other factors such as ecological diversity of species must be considered before firm conclusions can be drawn.



(above) High school biology students sampling aquatic invertebrates near Bridger, Mont. (below) Biology students from Billings Senior High checking a riffle in the Yellowstone River above Billings. photos by Donald L. Tennant



What in the world are we leaving for our kids?



"We, the adult population, being of sound mind and body, do hereby bequeath to our children all of our magnificent freeway systems, our opulent shopping centers with their millions of acres of blacktop parking space; we leave our sprawling and ever-growing suburbs and our 'quaint' inner-city areas; we leave our industries and

their incredible ability to spew out a mind-boggling array of shiny new products; we leave..."

If we adults were to sit down and collectively write out our last will and testament, how many of us would think of mentioning what is possibly our most precious resource—our wildlife and wilderness areas—the great parts of this country that are still close to the condition they were in when God gave them to us. We can hardly expect our children to respect these assets if we show a callous and uncaring attitude ourselves.

But how do you teach young people the value of the outdoors? How do we help them understand our love and appreciation for wilderness and wildlife when we have so little time to spend together with them in the great outdoors?

One possible answer is to get them involved in a gun club. To some, this might sound contradictory. It might seem like an encouragement for young people to learn to shoot the very wildlife we're trying to protect. But the fact is that today's hunters and fishermen are the country's staunchest conservationists. The dollars gained from game licenses are channeled directly back into land acquisition, wildlife habitat improvement and management. Actually, no group in this

country has been more dedicated to or worked harder for our environment—land and wildlife conservation included—than hunters.

So when you ask, "Who will carry on? Who will lead the fight for conservation in future years?" our hope has to be in our children. That's why we suggest getting them involved in a well-organized and supervised shooting group now. It's one of the best ways to instill in them a love, appreciation and respect for the outdoor world—our most precious resource.

If you'd like to find out more about the hunter's role in conservation, please fill in the coupon below and send for our booklet today.

National Shooting Sports Foundation, Inc.
1075 Post Road, Riverside, Conn. 06878

THE HUNTER AND CONSERVATION is mailed postpaid for 25¢ a copy or \$1.00 per package of 5 copies.

Yes, please send me your booklet. I enclose \$_____ for _____ copies.

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Helping Nongame Wildlife

Montana has about 357 bird species—38 game and 319 nongame. The state also has 101 mammal species—12 game and 89 nongame, and about 79 fish species—24 game and 55 nongame. Yet, these 74 game species receive the most attention and the bulk of the department's budget goes for their management. The 463 nongame species (and this doesn't include reptiles, amphibians, mollusks or crustaceans, which number in the thousands) receive a scant \$27,000, less than 1% of the department budget.

Many admirers of nongame wildlife—bird watchers, backpackers, cross-country skiers, photographers, sight-seers and others—criticize the department for ignoring "other" wildlife. They want the *game* department to become more interested in all *wildlife*.

But there's one basic problem.

Hunters and fishermen fund fish and game departments with their license dollars and through special excise taxes on hunting and fishing equipment. Thus, sportsmen expect their money to be used for game species. True, nongame species have benefited greatly from habitat management and land acquisition aimed at game animals, but they have received little additional consideration.

In 1973, the Montana Legislature passed the Nongame and Endangered Species Conservation Act. This officially created a nongame and endangered species program within the Dept. of Fish and Game. However, like many statutes, it didn't provide funding.

Given this restraint, it was

difficult at best to squeeze *any* nongame funds out of already overextended budgets—let alone an adequate program. So in 1974 when a formal statewide nongame program was finally launched, it was severely underfunded—one full-time biologist working with a \$27,000 yearly budget.

Although lawmakers failed to provide funding in 1973, the 1975 legislature gave nongame supporters an opportunity to advance the nongame program. S.B. 236 authorized sale of \$5 nongame certificates on a voluntary basis. In other words, anyone can contribute to nongame management by buying a certificate, even though it isn't required as hunting and fishing licenses are. The money from certificate sales goes into nongame programs.

The certificates go on sale April 15. Any business selling fish and game licenses will also have these certificates available. And they can be purchased at any Dept. of Fish and Game office.

Hopefully, those interested in nongame and endangered wildlife will respond accordingly, so Montana can move toward an adequately funded nongame program.

SPRINGBOARD

"Man always kills the thing he loves, and so we the pioneers have killed our wilderness. Some say we had to. Be that as it may, I am glad I shall never be young without wild country to be young in. Of what avail are forty freedoms without a blank spot on the map?"—*Aldo Leopold*

FOR DISCUSSION

GRIZZLY FILM HONORED

The department's newest film, "Room to Live," has been honored by the International Film and Television Festival. A panel of professionals from the motion picture industry awarded the film third place in the "documentary environmental" category. The award is a bronze medal.

The film, which portrays the grizzly bear's plight in modern America, has been well received throughout Montana. The main theme of the film, according to its director-producer, Craig Sharpe, is that the grizzly needs room to live. And if we can give the bear this room, it may be with us for a long time. However, if habitat encroachment continues, Montana may lose one of her magnificent wild creatures.

Sharpe also said this relatively low budget production was judged along with higher budget films produced by private corporations and television networks from all over the world.

CRAZY MOUNTAINS PURCHASE

We've mentioned the Gallatin National Forest many times in *Montana Outdoors*—usually with negative wording. We've pointed out possible wildlife habitat damage from timbering, road building and recreational development. Now, however, the pendulum has taken a full swing, and we must give credit where credit is due.

The Forest Service (FS), through the Gallatin National Forest, recently purchased 4,575 acres of the fragile and beautiful Crazy Mountains for \$65 an acre. The acquisition prevented potential land subdivision because Venture Limited, a Colorado-based land development firm, owned the land. Venture hadn't released any formal development plans, but the threat of subdivision was imminent.

Officials have been working on the sale for years. In fact, the FS had obtained an option on the land from Venture. But the acquisition was jeopardized when federal funding wasn't approved

continued

recycled paper

before the option expired.

Fortunately, Nature Conservancy, a citizen organization specializing in such land acquisition problems, stepped in and purchased the land from Venture with the understanding the FS would buy the land as soon as funding became available.

In announcing the purchase, Lewis E. "Gene" Hawkes, supervisor of the Gallatin National Forest, explained, "All of the lands purchased are surrounded by adjoining National Forest lands." Thus, Hawkes feels this solid ownership will "...greatly facilitate land-use planning and resource management."

GATORS OFF LIST

The comeback of American alligators in southern states has

prompted a proposal to remove certain populations of the large reptile from the endangered species list, according to the Wildlife Management Institute.

Strong state and federal management programs are credited with being responsible for the animal's recovery. In some areas of Louisiana and Florida, 'gators are so numerous that they have become public nuisances, crawling on golf courses, resting on roads, and, in one instance, killing a teenage bather.

The U.S. Fish and Wildlife Service (FWS) began a review of the American alligator last year and found that population levels in parts of South Carolina, Georgia, Florida, Louisiana and Texas are high. The study also found that populations in three

Louisiana parishes were neither endangered nor threatened and would best be served by returning them to the state for management.

The FWS proposal includes: removing the alligator from all federal lists in the three Louisiana parishes where populations have attained a healthy balance, moving the gator from the endangered to the threatened list in Alabama, Florida, Georgia, Louisiana (except Cameron, Vermilion and Calcasieu parishes), Mississippi, South Carolina and Texas, and retaining the alligator on the endangered list in Oklahoma, Arkansas and North Carolina where populations are still low.

PROPERTY OWNERS REACT

The Helena Property Owners Assn. objected to the item, "Very Few People Know How to Give," in the Nov./Dec. 1975 *Montana Outdoors* Catchall section. Specifically, they disliked the statement, "Soon after the deal closed, the local property owners' association sharply criticized French."

The Helena Property Owners Assn. didn't publicly or officially denounce French's sale. However, our source of information reaffirmed some informal unrest among individual members of the association. Nonetheless, the statement was technically incorrect, so we wish to retract it.

CALLING ALL COOKS

Have you experimented recently with something new utilizing fish, game or an edible wild plant? Maybe the resulting dish was so tasty that you'd like to share it with *Montana Outdoors* readers. If so, write it down and send it to us.

We especially need new ideas for edible wild plants, small game and suggestions on smoking, canning and other preservation methods. Send recipes to: Kay Ellerhoff, *Montana Outdoors*, Dept. of Fish and Game; Helena, MT 59601. Whenever we use your recipe, you will, of course, be credited with submitting it.

contributors

What's more "binding than barbiturates, more tenacious than the craving for alcohol, more serious than an academic course in aerodynamics?" The answer, of course, is calling up a tom turkey. Ken Walcheck provides historical perspective, biological insight and enumerates management problems in his article, "The American Emblem that Almost Was." Benjamin Franklin worked hard to assure the turkey's selection as our national bird. But campaign workers for the bald eagle tried a little harder and it won by a single vote. In addition to submitting frequent articles to *Montana Outdoors*, Walcheck is an avid turkey hunter. The department's information officer in Miles City, he holds a B.S. in wildlife conservation and biology from Wisconsin State University and a M.S. in applied science (ecology) from Montana State University, Bozeman. Turn to page 2 for his article.

Do you remember when Earth Day was a big deal? To a group of students and teachers studying the aquatic environment of the Yellowstone River, Earth Day 1970 served as the springboard for an ongoing project. Donald L. Tennant, a U.S. Fish and Wildlife Service biologist in Billings and Dave Diamond, a biology student at Eastern Montana College, Billings, will bring you up to date on the project, beginning on page 8.

MO intern Hank Fischer tackled two major assignments in this issue. First, he acquaints readers with a subdivision

near Wolf Creek which no state or local agency knew anything about until lots had been sold and faulty roads constructed. Aptly titled "The Subdivision Nobody Knew," the project is twice as large as any previous Lewis and Clark County development. Turn to page 27 for the Wolf Creek article. While we hear a great deal about public land, private forest operations have received little publicity and almost no regulation. In a second article, Fischer traces the history of private forests in Montana, relates what can happen when landowners sell their timber without knowing about some of the perils and makes a strong case for the value of private forests for fish, wildlife and recreation. "Private Forestry" appears on page 34. Fischer joined MO in late August as our first intern and returned to his graduate work in environmental studies at the University of Montana, Missoula, in early January.

The fourth and final article in our series on Montana's endangered species features the peregrine falcon. Billed as "the fastest bird in the world," the peregrine reaches speeds estimated at 150-200 miles per hour. But, unfortunately, the falcon isn't fast enough to escape the many threats to its very existence, as Dennis Flath points out in his article on page 31. Flath, the department's nongame species biologist, earned his B.S. in biology from Pacific Lutheran University and a M.S. in wildlife biology from the University of Montana.

Baucus Introduces Flathead River Bill

With proposed coal development on one hand and possible oil and gas leasing on the other, the future of the Flathead River drainage in northwestern Montana becomes more tenuous with each passing day. (See Good-bye, North Fork?" in the Jan/Feb. 1976 *Montana Outdoors*.) In an attempt to demonstrate the desire of both Montana and the nation to keep the Flathead River free of pollution, Rep. Max Baucus (D-Mont.) introduced a

bill in November 1975 to include portions of the Flathead River in the national Wild and Scenic Rivers System.

The bill specifies three separate categories for classifying segments of the three forks of the Flathead—wild, scenic and recreation. Each category calls for maintaining the river in a "free-flowing" state and keeping the water of "high quality." The three categories generally differ in the amount of development present in

adjacent areas:

(1) A "wild" river is defined as one free of impoundments, generally accessible only by trail, with primitive watersheds and shorelines and unpolluted water.

(2) A "scenic" river is free of impoundments, has largely undeveloped and primitive shorelines and watershed, but it is accessible in certain areas by roads.

(3) Those rivers with shorelines readily accessible by roads or railroads, shorelines partly developed and possibly including some impoundment or diversion in the past are defined as "recreation" rivers.

The bill would provide protection for only about ¼ mile of shoreline on each side of the river. More than 80% of the land involved is federally owned. The proposed legislation also contains provisions for protecting the rights of landowners who would be affected by its passage.

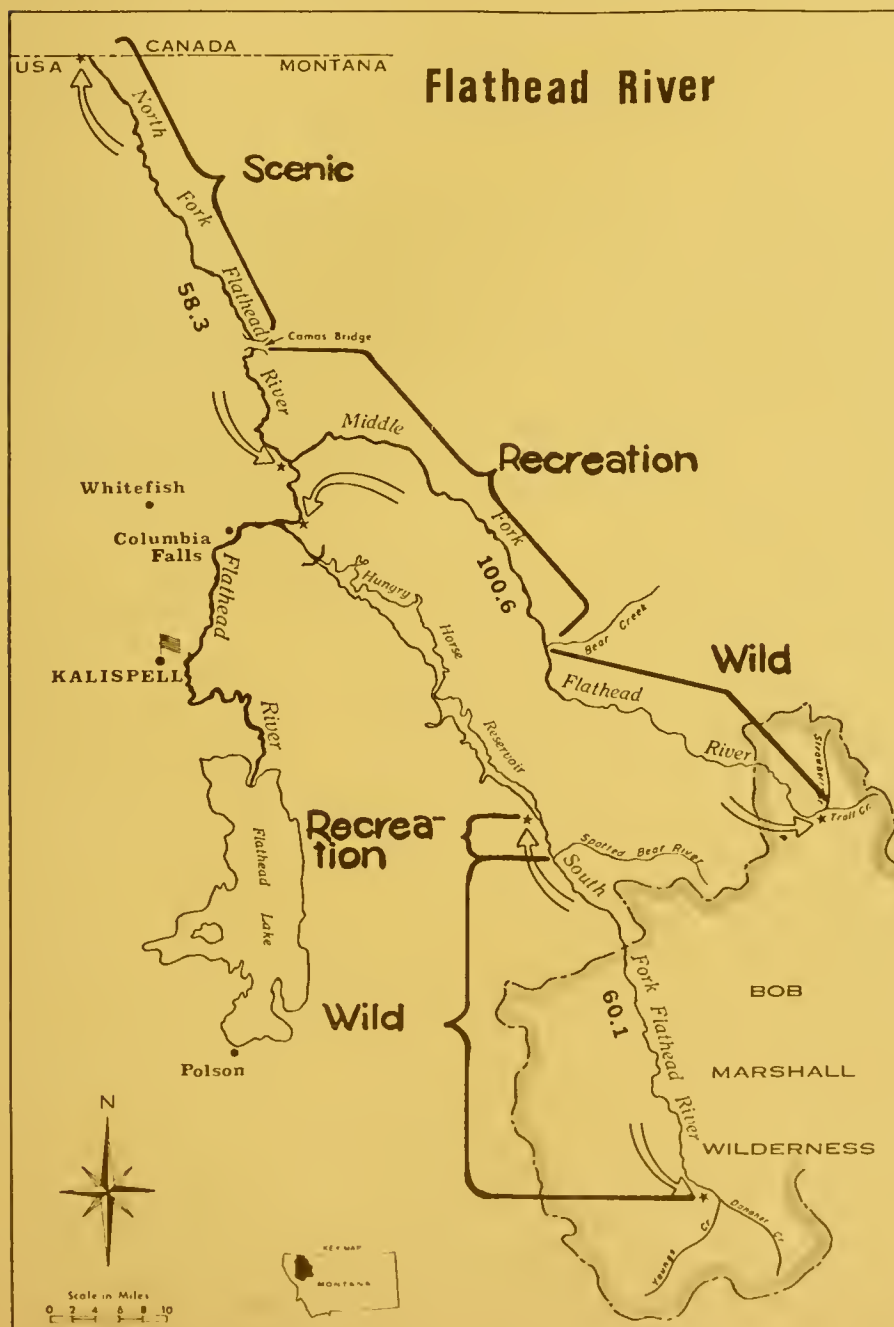
While the bill will not stop coal mining or oil and gas leasing in the Flathead, it emphasizes U.S. interest in keeping the Flathead drainage unpolluted. It will stop damming and reckless development along the shorelines. It also mandates federal agencies to help insure the water quality in the Flathead.

As Baucus told the House of Representatives in November, "A mechanism is needed to insure that human growth does not destroy priceless assets such as the Flathead River. Wild and Scenic River designation is such a mechanism."

THE OUTDOORSMAN'S BEST FRIEND

Once when Daniel Boone was asked whether he had ever been lost, he replied, "No, but I sure have been bewildered a few times." For hunters, cross-country skiers and small children who become bewildered in the Bitterroot or any of the rugged places of Montana, assistance is available that Daniel Boone never had—

continued



bloodhounds. Tony and Nancy Dumay of Florence, Mont. are among several Montanans who ardently train and use these sensitive-nosed animals.

The Dumays have been training bloodhounds for the past seven years. Search and rescue missions have taken them all over the Northwest. "It's a strange thing," said Mrs. Dumay. "We haven't done as much work in Montana as we have in some of the neighboring states. People in Montana are just learning what these dogs can do." There is no charge for their services and according to Mrs. Dumay, "We'll go almost anywhere."

One of the biggest problems the Dumays face with rescue missions is that people often call them too late. "It is difficult to work with tracks more than two days old," said Mrs. Dumay. They were unable to participate in a search for a hunter lost in the Gallatin last fall for just that reason. Mrs. Dumay emphasized they must be contacted quickly if they are to help. "These dogs can do amazing things, but only if they have



Tony Dumay and Blue, one of his bloodhounds.

something to work with," she said.

The Dumays belong to the Big Sky Search and Rescue Assn. All members are serious bloodhound

trainers and trackers. The group has made several successful search and rescue missions in the past year. Last fall the group was contacted about a huckleberry picker who had gone out in the Canyon Creek area near Columbia Falls and had not returned. The call was received at 6 p.m. and by midnight the bloodhounds had found the "bewildered" huckleberry picker, tired but in good health.

The Dumays describe the bloodhounds as loving and sensitive animals. They are very dedicated and when they find the object of their search, they often become very protective. One bloodhound that had tracked down a prison escapee refused to let the sheriff near to arrest the felon. The bloodhounds are also very sensitive to failure. According to Mrs. Dumay, "If a dog is unsuccessful in one or more rescue attempts, he may become very depressed." She went on to say they will often simulate a successful hunt if the dog has been unsuccessful.

The Dumays are eager to assist anyone trying to locate lost outdoorsmen. They can be reached in Florence at 406-273-6163. They urge anyone interested to join their group, but pointed out a problem—most bloodhounds cost from \$2,000-\$3,000.—*Hank Fischer*

MOVING?

If you're planning to move in the near future, please attach the label from your last issue and send it and your new address to *Montana Outdoors*, Department of Fish and Game; Helena, MT 59601.

NEW ADDRESS:

Name _____

Address _____

City _____ State _____ Zip _____



A FIELD GUIDE TO ANIMAL TRACKS, second edition. (Peterson Field Guide Series), by Olaus J. Murie, Houghton Mifflin Co., Boston, 1975, 376 pages; \$6.95 hardback, \$4.95 paper.

The specter of a legendary, huge and hairy Sasquatch (Big Foot) fades again: Its tracks did not make this new edition. All *authentic* tracks of mammals found in North America did. The famous first edition's track record held for 20 years until this better printing. The second edition is better because its ancillary features—new type style, a handy paper edition for the field, revised index, updated common and scientific animal names, ample boldface lettering—are distinctly arranged to amplify the original text. Now you can find the facts on animal tracks without fumbling through the pages.

Dr. Murie's wildlife wisdom flows in a stylish format unique to the Peterson Field Guide Series. From "What's Happening Here," an entertaining and authoritative elucidation of his method, to the staggering bibliography, you are perfectly drawn to his narrative exposition of *all* tracks carefully detailed by artistic line drawings.

Sponsored by the National Audubon Society and National Wildlife Federation, this complete compilation of animal tracks and signs by the peerless conservationist and woodsman is bound to encourage the study and enjoyment of the outdoors. It puts you on the track of new, refined adventures into the animal realm.—*Aaron R. Spurway*



F&G photo by Craig Sharpe

Respect Your Mother. . .

Chief Seattle's Challenge

DR. Henry A. Smith, who heard Chief Seattle speak, described him in the Oct. 29, 1887 Seattle Saturday Star:

"Old Chief Seattle was the largest Indian I ever saw, and by far the noblest looking. His eyes were large, intelligent, expressive and friendly when in repose, and faithfully mirrored the varying moods of the great soul that looked through them.

"He was usually solemn, silent and dignified, but on great occasions moved among assembled multitudes like a Titan among Lilliputians, and his lightest word was law.

"When rising to speak in council or tendering advice, all eyes were turned upon him, and deep-toned, sonorous and eloquent sentences rolled from his lips like the ceaseless thunder of cataracts flowing from exhaustless fountains, and his magnificent bearing was as noble as that of the most civilized military chieftain in command of the forces of a continent.

"Neither his eloquence, his dignity, nor his grace were acquired. They were as native to his manhood as are needles and cones to a great pine tree.



photo by Alan Nelson

"His influence was marvelous. He might have been an emperor, but all his instincts were democratic, and he ruled his subjects with kindness and paternal benignity.

"He was always appreciative of marked attentions from white men, and never so much so as when seated at their table, and on such occasions he manifested more than anywhere else his genuine instincts of a gentleman.

"Chief Seattle arose, with all the dignity of a senator who carries the responsibility of a great nation upon his shoulders. Placing one hand upon the Governor's head, and slowly pointing heavenward with the index finger of the other, he commenced his memorable address in solemn and impressive tones":

* * * * *

Yonder sky that has wept tears of compassion upon our fathers for centuries untold, and which to us looks eternal, may change. Today it is fair. Tomorrow it may be overcast with clouds.

My words are like the stars that never set. What Seattle says the Great Chief at Washington can rely upon with as much certainty as our paleface brothers can rely upon the return of the seasons.

The son of the White Chief says his father sends us greetings of friendship and good will. This is kind of him, for we know he has little need of our friendship in return because his people are many. They are like the grass that covers the vast prairies, while my people are few, they resemble the scattering trees of a storm-swept plain.

The Great Chief in Washington sends word that he wishes to buy our land. How can you buy or sell the sky, the warmth of the land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them?

Every part of this earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing, and humming insect is holy in the memory and experience of my people. The sap which courses through the trees carries the memories of the red man.

The white man's dead forget the country of their birth when they go to walk among the stars. Our dead never forget this beautiful earth, for it is the mother of the red man. We are part of the earth and it is part of us. The perfumed flowers are our sisters; the deer, the horse, the great eagle, these are our brothers. The rocky crests, the juices in the meadows, the body heat of the pony, and man—all belong to the same family.



photo by Danny On

So, when the Great Chief in Washington sends word that he wishes to buy our land, he asks much of us.

The Great Chief sends word he will reserve us a place so that we can live comfortably to ourselves. He will be our father and we will be his children.

So we will consider your offer to buy our land. But it will not be easy. For this land is sacred to us.

This shining water that moves in the streams and rivers is not just water but the blood of our ancestors. If we sell you land, you must remember that it is sacred, and you must teach your children that it is sacred, and that each ghostly reflection in the clear water of the lakes tells of events and memories in the life of my people. The water's murmur is the voice of my father's father.

The rivers are our brothers, they quench our thirst. The rivers carry our canoes, and feed our children. If we sell you our land, you must remember, and teach your children, that the rivers are our brothers, and yours, and you must henceforth give the rivers the kindness you would give any brother.

The red man has always retreated before the advancing white man, as the mist of the mountain runs before the morning sun. We know that the white man does not understand our ways. One portion of land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs. The earth is not his brother, but his enemy, and when he has conquered it, he moves on. He leaves his father's graves behind, and he does not care. He kidnaps the earth from his children. He does not care. His father's graves and his children's birthright are forgotten. He treats his mother, the earth, and his brother, the sky, as things to be bought, plundered, sold like sheep or bright beads. His appetite will devour the earth. . . .

The sight of your cities pains the eyes of the red man. But perhaps it is because the red man is a savage and does not understand.

There is no quiet place in the white man's cities. No place to hear the unfurling of leaves in spring or the rustle of insect's wings. The clatter only seems to insult the ears. And what is there to life if a man cannot hear the lonely cry of the whippoorwill or the arguments of the frogs around a pond at night? The Indian prefers the soft sound of the wind darting over the face of a pond, and the smell of the wind itself, cleansed by a midday rain, or scented with the pinon pine.

The air is precious to the red man, for all things share the same breath—the beast, the tree, the



photo by Jan Cates



photo by Jon Cotes

man, they all share the same breath. The white man does not seem to notice the air he breathes. Like a man dying for many days, he is numb to the stench. But if we sell you our land, you must remember that the air is precious to us, that the air shares its spirit with all the life it supports. The wind that gave our grandfather his first breath also receives his last sigh. And the wind must also give our children the spirit of life. And if we sell you our land, you must keep it apart and sacred, as a place where even the white man can go to taste the wind that is sweetened by the meadow's flowers.

So we will consider your offer to buy our land. If we decide to accept, I will make one condition: The white man must treat the beasts of this land as his brothers. I have seen a thousand rotting buffalo on the prairie, left by the white man who shot them from a passing train. I am a savage and I do not understand how the smoking iron horse can be more important than the buffalo that we kill only to stay alive.

What is man without the beasts? If all the beasts were gone, men would die from a great loneliness of spirit. For whatever happens to the beasts, soon happens to man. All things are connected.

You must teach your children that the ground beneath their feet is the ashes of our grandfathers. So that they will respect the land, tell your children that the earth is rich with the lives of our kin. Teach your children what we have taught our children, that the earth is our mother. Whatever befalls the earth, befalls the sons of the earth. If men spit upon the ground, they spit upon themselves.

The earth does not belong to man; man belongs to the earth. All things are connected like the blood which unites one family.

Man did not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself.

Our dead never forget this beautiful world that gave them being. They still love its winding rivers, its great mountains and its sequestered vales, and they ever yearn in tenderest affection over the lonely-hearted living, and often return to visit, guide and comfort them.

Day and night cannot dwell together. The red man has ever fled the approach of the white man as the changing mist on the mountain side flees before the blazing sun.

However, your proposition seems a just one, and I think that my people will accept it and will retire to the reservation you offer them. Then we



F&G photos by Mike Adershold

will dwell apart in peace, for the words of the Great White Chief seem to be the voice of Nature speaking to my people out of the thick darkness, that is fast gathering round them like a dense fog floating inward from a midnight sea.



F&G photo by Mike Aderhold

Our children have seen their fathers humbled in defeat. Our warriors have felt shame, and after defeat they turn their days in idleness and contaminate their bodies with sweet foods and strong drink.

It matters little where we pass the remnant of our days. They are not many. The Indian's night promises to be dark. No bright star hovers above his horizon. Sad-voiced winds moan in the distance. Some grim Fate of our race is on the red man's trail, and wherever he goes he will still hear the sure approaching footsteps of his fell destroyer and prepare to stolidly meet his doom, as does the wounded doe that hears the approaching footsteps of the hunter.

A few more hours, a few more winters, and none of the children of the great tribes that once lived on this earth or that roam now in small bands in the woods will be left to mourn the graves of a people once as powerful and hopeful as yours. But why should I mourn the passing of my people? Tribes are made of men, nothing more. Men come and go, like the waves of the sea.

Even the white man, whose God walks and talks with him as friend to friend, cannot be exempt from the common destiny. We may be brothers after all; we shall see. One thing we know, which the white man may one day discover—our God is the same God. You may think now that you own Him as you wish to own our land; but you cannot.



photo by Danny On



F&G photo by Bill Schneider

He is the God of man, and His compassion is equal for the red man and the white. This earth is precious to Him, and to harm the earth is to heap contempt on its Creator. The whites too shall pass; perhaps sooner than all other tribes. Continue to contaminate your bed, and you will one night suffocate in your own waste.

But in your perishing you will shine brightly, fired by the strength of the God who brought you to this land and for some special purpose gave you dominion over this land and over the red man. That destiny is a mystery to us, for we do not understand when the buffalo are all slaughtered, the wild horses are tamed, the secret corners of the forest heavy with the scent of many men, and the view of the ripe hills blotted by talking wires. Where is the thicket? Gone. Where is the eagle? Gone. And what is it to say goodbye to the swift pony and the hunt? The end of living and the beginning of survival.

When the last red man shall have perished, and the memory of my tribe shall have become a myth among the white man, these shores will swarm with the invisible dead of my tribe, and when you

children's children think themselves alone in the field, the store, the shop, or in the silence of the pathless woods, they will not be alone. . . . At night when the streets of your cities and villages are silent and you think them deserted, they will throng with the returning hosts that once filled them and still love this beautiful land. The white man will never be alone. When the last red man has vanished from this earth, and his memory is only the shadow of a cloud moving across the prairie, these shores and forests will still hold the spirits of my people. For they love this earth as the newborn loves its mother's heartbeat. So if we sell you our land, love it as we've loved it. Care for it as we've cared for it. Hold in your mind the memory of the land as it is when you take it. And with all your strength, with all your mind, with all your heart, preserve it for your children, and love it. . . as God loves us all.

* * * * *

•In researching Chief Seattle's famed remarks, we found several conflicting versions and adaptations. The above comments are excerpts from the various versions.—Ed.

dear F&G

Wake Up, Fellow Montanans!

Isn't it about time we put a stop to the Ohio, California and other so-called corporations which are buying land for corporate retreats and in all essence, aren't really buying land for retreats at all? They are buying to rip up and rape our beautiful land of its scenic beauty, to destroy our wildlife and bilk many hard-working farmers and ranchers into selling land for pennies. They—the so-called land developers—subdivide, cut up, destroy nature and sell the same land for thousands of dollars.

A good example would be the Ohio corporation that bought a good portion of Wolf Creek for around \$30 per acre and resold much of it for \$300-\$700 per acre, with little or no actual development. Then go back to the unsuspecting farmer or rancher who was good enough to sell the land in good faith at a bargain, with no knowledge of subdivision and a promise it wouldn't be subdivided. Such corporations openly make the farmer or rancher look like an out-and-out fool.

The farmers and ranchers are not fools. They are merely honest, God-fearing men who, like most, assume that honesty is the best policy. But this is not so with these so-called developers. Their motto would most likely be, 'To hell with honesty, sell the land and get the money, no matter who gets stepped on.'

The South Fork of the Dearborn River, Woods Creek and Greenpole Creek are beautiful areas that should be kept free of motorized travel. They should continue to be places where people can hike, fish and enjoy unpolluted nature. If these developers have their way, in a short time, they will no longer be beautiful. They will be cut up with roads, some of which have already been pushed in unlawfully across state land, with no regard to laws which should keep developers from cutting up this land.

They would sell this land to unsuspecting people, promising access year round, when in reality three months per year would seem more in order. Perhaps access would be possible another four months by snow machine if the snow drifts didn't stop you.

How much longer are we going to let these legal rapists continue to take advantage of friends, relatives and others, before we put a stop to activities like these? Are we still concerned with the welfare of Montana? She depends on us,

the people, for her welfare. Isn't it time we all stood together and stopped these disgraceful people from destroying our beloved state? Wake up, fellow Montanans!—*Jerry Brooking; Great Falls, Mont.*

•For more on the Wolf Creek story, see "The Subdivision Nobody Knew" on page 27 of this issue.—Ed.

WRITERS SHOULD MOVE OUT AND GIVE GRIZZLIES MORE ROOM

Your magazine has excellent, informative articles on our fish, birds and game and the pictures are marvelous. However, we get tired of the environmentalists' articles on loss of game habitat and the encroachment of people on game, knowing about two-thirds of our state is public land.

Why don't these writers move out and give the grizzly bear more room? By creating more wilderness areas, they are attracting more visitors and these people return to become residents. They forget when a million people spend their vacations in such an area, it is no longer a wild area.

The population explosion and the economic crash our country is heading for will cause millions of people to move to our state and no group or law can prevent it. Survival of people will bring about the extinction of many of the things we now enjoy.—*Charles K. Green; Coram, Mont.*

THERE WAS ONE LEFT

Nearly 30 years have passed since. I first ventured into the Missouri Breaks country to hunt. Deer habits and haunts became familiar, along with easier trails. Hiking was part of the game that wasn't crowded. Sizable herds were quite common, seen leaving the bottomlands at

SPRINGBOARD

"Perhaps our grandsons, having never seen a wild river, will never miss the chance to set a canoe in singing waters."
—*Aldo Leopold, "A Sand County Almanac"*

FOR DISCUSSION

daybreak, but usually taking their time browsing and pawing for clover roots. A buck polishing his antlers or a couple of bucks butting antlers wasn't uncommon. But the next one might be bigger. They seemed to manage on what was available. A new hereford bull should be pampered some or he might not make it, but the old range bull looks pretty good.

But time has advanced, and more recently the first few days of hunting season make a well-traveled road with numerous side runs. The does and fawns that are left are moving at 1,000 yards. They clear the ridge, but soon an automatic cuts loose. They have had their last fawn. Unlicensed vehicles are prominent from dawn to dark. The real problem is migrating lead poisoning. The muley and whitetail are both nearly gone.

Many years ago on a memorable morning, my junior partner and I headed out early, up a favorite ridge, heading back to the sandstone rims. From above, sounds carry far. The coyote serenade has ended. The yodeling bark of a fox comes from the far side of the river, along with the flutter of wings and cackle of pheasants. Somewhere below, some chirping turkeys are about to leave the roost. A flock of bugling honkers passes below on their way out to feed. Now and then a sharptail sails from the ridge. We seem to have the area to ourselves this morning. Not a pickup has shown and only a few scattered shots come from out Crooked Creek way.

When crossing back to my side of the ridge, after checking with Junior, a fresh track catches my eye. It's big and sinks deep. It seems to be a loner. After trailing on a ways, I'm sure it's a good buck. He's not spooked. He's walking, but not stopping. I think he will bed soon. Further on, I find his droppings. They're still slick, so I can't be far behind. I lose his tracks in a grassy swale, so I hunt up a juniper-grown wash paralleling a saddle. He's not there, so I head for the ground 100 yards above. I pause to catch my breath before topping over. Buck fever could be near.

I edge to the top and search some scattered juniper and a small patch of greasewood across the head of another wash. As I take another step, he jumps from the greasewood. He's big. I'm on him as he wheels to the left heading straightaway. I'm on his neck, but it is 200 yards straight into the bottom. I do not shoot. As I hurry up the saddle, I expect to hear a shot, as I know Junior is just around that hump. I have my gun ready and search the bottom for movement. I spot him under a tree at the lower end of a second ridge. As he starts to run, I pull two feet ahead across his antlers and shoot. I hear the unmistakable whoop of a solid hit. As he vanishes, my spirits are up. I'm sure I have him—or have I?

I try to hurry around and down the ridge but these old legs aren't what they used to be. I finally find the tree and his tracks. I glance into a soft, deep wash. There he lays. I approach him cautiously,

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his head and eyes still lifelike. I toss a rock and poke his antlers with a stick. He is dead. A quick autopsy reveals a broken neck above the front shoulder. I pause to have a smoke and admire his antlers. It's a long way back to the saddle. The old Springfield is right on this year.

I hurry on with my chores, wondering where Junior is, as a threatening sky and northerly wind begin spitting a little rain. Usually I would let the buck hang until tomorrow morning, but some four-wheel maverick might like this one enough to drag him out. Or, the cats might fowl the carcass. Junior soon shows up and we decide to drag him out. About three hours later we have him where we can pick him up.

The sky is beginning to clear and things are looking a lot brighter now. There was one left.—*Peter McDermott; Billings, Mont.*

MEATY PUBLICATION

Just a quick note to tell you what a super job you do with *Montana Outdoors*. I consider it to be one of the finest, if not the finest of all, that crosses my desk every couple of months.

You provide us with "meat" and do an

excellent job of writing, photo selection, separations and reproduction. I can only speak for those of us at Bear Archery and The Fred Bear Sports Club, but I am sure there are a great many people around the country who feel likewise.

Keep up the good work.—*Dick Latimer, advertising/sales promotion manager, Bear Archery; Grayling, Mich.*

DON'T IGNORE THE EARTH ETHIC

I have just read the Nov./Dec. 1975 issue of *Montana Outdoors* from cover to cover. Two articles were of particular significance to me, as they should be to everyone concerned with the real, fundamental values of life.

First, the letter to the editor, "A Non-resident's View of Hunting" by Andrew Cherpak was written by a man who has seen and perceives the truth. As a hunter, a person who has lived in Appalachia, who better than he can see the dark clouds so many native and resident Montanans complacently ignore?

Second, the very scholarly article, "Toward a Common Goal," by Robert E. LeResche was also significant. He also has seen, with the additional "eyes" of a good scientific background.

Indeed, the loud and clear call is, "Wake up Montanans, wake up—all of you environmentalists, be ye hunter or nonhunter." The signs and acts are everywhere—the real estate sprawl in Rock Creek, the excess clearcuts in Lolo, the tacky-tacky development around the Flathead, the deadfalls at Great Falls, the tourist traps up the Gallatin, the choking dust from the Army Corps' dirty dam by Townsend, overgrazed high country in the Bighorns, the fake facade of a Colstrip, the motel-industrial pollution of the Billings beet field suburb. Yes, the horrible signs and symptoms are accelerating. There is no place for the slob hunter or the slob anti-hunter.

Outdoorsmen and people of concern from all of life's sincere, diverse philosophies must join the common goals of the greatness and the happiness of the natural world which so many are exploiting for momentary personal gain. Must we continuously ignore the wise earth ethic of Chief Joseph, Chief Seattle, Chief Plenty Coups? If we can no longer "touch the earth," we will perish in spirit, if not in body.—*Ed Markham; Sherwood, Ore.*

PROBLEMS FACING WILDLIFE

I am a former resident of Idaho and am concerned about the problems facing wildlife and the ecosystems of areas which are either presently classified wilderness, and those which could additionally be so classified for the benefit of the wildlife, the land and man. I am concerned about the problems besetting our environment as a nation, too. But since I am more acquainted with the Northwest, I have sought to continue to be well informed about its problems.

Montana, to me, is a lot more than I can express in a few words. I have spent enough time there—in places between Hardin and Lookout Pass—to know I feel a great love for the land that God has made there.

Eventually I hope to return to either Idaho or Montana to live.—*George J. Allen; Bel Air, Maryland*

WHY ARE WE LETTING THEM DO IT?

I have noticed for some time your concern with quality-of-life environment (both for wildlife and for us tamer species) in Montana (and, by extension, the rest of the United States), as opposed to mere "growth" expansion. I expect, therefore, that your response to the recently announced decision to permit "conditional" construction of Colstrip #3 and #4 would be somewhat more restrained than the Spokesman Review's. (I did not have an opportunity to read that editorial. I understand from excerpts in the Great Falls Tribune that they hailed the "foresight" of the decision, which would permit a "little" deterioration of air/water/environmental quality in eastern Montana as the necessary "price" to be paid for meeting projected industrial and population growth in the Inland Empire

dams spawn more dams

We read with great interest the article concerning the Libby Dam project in the Nov./Dec. 1975 *Montana Outdoors*. We agree there is no way to fully compensate for the effect on fish and wildlife resources caused by such projects. People should also realize that once a portion of a river is impounded and regulated for power construction facilities, the construction of more dams on the same river is almost inevitable.

The Northern Lights Power Co., based in Sandpoint, Idaho, has already acquired from the Federal Power Commission a permit to study the economic and engineering feasibility of another dam and hydroelectric power facility at Kootenai Falls, about 30 miles downstream from Libby Dam. The proposed dam would destroy one of the most beautiful natural areas in Montana, disrupt the major spawning area of the only white sturgeon population in Montana, provide access to and harassment of a presently thriving bighorn sheep population and impound four more miles of blue ribbon fishing water.

Last spring we organized a Kootenai River Protective Assn. to oppose the proposed dam at Kootenai Falls and to initiate a Wild and Scenic River study on the remaining free-flowing Kootenai River and its major tributary below Libby Dam, the Yaak River. We have since merged this group with our Libby Rod and Gun

Club and feel we can represent more voices in this way.

In addition to the proposed dam at Kootenai Falls, another active dam site exists at Kadka, Idaho, about seven miles downstream from the Montana border. A dam at the Kadka site would destroy the spawning runs of kokanee, white sturgeon and rainbow trout which originate in Kootenay Lake in British Columbia.

Four active dam sites are present on the main stem of the Yaak River. The Yaak is one of the more scenic and better fishing streams in northwestern Montana. The upper part of the Yaak has an excellent fishery for wild brook and cutthroat trout. The lower part supports large spawning runs of rainbow trout and mountain whitefish from the Kootenai River.

The goal of initiating a Wild and Scenic River study on the Kootenai and the Yaak cannot be reached without support of interested citizens from throughout Montana and other states. Therefore, we hope and ask that concerned persons who share our views will write their representatives in Congress and encourage them to oppose the dam at Kootenai Falls and encourage them to aid in the implementation of a Wild and Scenic River study on the Yaak and the Kootenai. This is our only hope to preserve these beautiful and productive streams for future generations to enjoy.—*Bill Hiatt, chairman, Committee on the Kootenai Drainage Protection, Libby Rod and Gun Club; Libby, Mont.*

and Pacific Northwest over the next 10-20 years.)

Apparently, they also considered the "price" to Montana far more "acceptable" than "unpopular energy cutbacks." Well, I presume it would be—to a population in the Pacific Northwest. I have no objection to heating schools and hospitals, but I wonder why we are "allowed" the privilege of financing a growth they themselves are unable or unwilling to be economically (in terms of energy source) or ecologically responsible for? So more Montanans can have the joy of running to Seattle or Spokane to look for jobs.

Here in Bozeman, at Montana State University, and in Butte, work is going forward on development of the new MHD generator. The project is not entirely an "experimental" one, as a working generator of this type is in use in the Soviet Union, as well as the prototype generator constructed at laboratories in Massachusetts. While these generators can utilize various kinds of fuel initially, it is understood that in Montana the fuel source would be coal.

These generators have been *shown* to be economically more efficient. There is practically no waste energy in the direct conversion to electricity. And they cause up to 50% less pollution. The heated water, which is one of their by-products, is used in the Soviet Union to heat buildings before being returned to the cycle. They are available, they work, they save energy, they are comparably nonpolluting and they will be constructed in Montana.

Why then is Montana Power going ahead with plans to build the older type, less efficient, high pollution generators at Colstrip #3 and #4? I find this hard to

follow, let alone do I see why our state is permitting it. Is it some question of increased profit to Montana Power? I assume it might be cheaper for the company, initially, to build the old type of generator, just as it is cheaper to them (not to us—ecologically or in terms of jobs) to strip mine our coal, rather than using the open shaft method which would provide more jobs and little scarring.

But why are we letting them do it? If this power is "needed" (even taking that assumption at face value) in the Pacific Northwest in the next 10-15 years, why can't they wait and build a newer type (MHD) generator which would permit longer, more efficient use of our fossil fuels for them and less pollution for Montana? Or, doesn't Montana Power's board of directors *read* the Montana papers? Why are they going ahead with Colstrip #3 and #4? I feel some questions have need of answers. If you can suggest whom to start asking, please reply.—*Laulette Malchik; Bozeman, Mont.*

ENTERTAINING ENDEAVOR

I picked up a copy of your fine magazine last summer while vacationing in Montana. I don't know how I missed it during my previous 15 visits to your great state. Let me congratulate you for what is both an informative and entertaining literary endeavor.—*Ted Lacock; Eugene, Ore.*

WHAT WILL THINGS BE LIKE?

We hunted in southeastern Montana in 1970 and not again until 1975. We could hardly believe the changes in the deer herds—and antelope, too. We didn't see one mule deer where we had seen thirty before. We also saw fewer antelope. From

all we saw of out-of-state hunters and a lot of native hunters, we were sorely ashamed of their sportsmanship. They're bound to try and fill their license at all costs. Of course, with license fees of \$151 and going up, they probably felt they had to.

I hope you're aware also of fewer fawns in some localities. We saw bobcats and heard stories of coyotes. We don't really believe they all were stories. There must have been some truth in them.

We appreciated the privilege of hunting in Montana and we pray God saves this land and the habitat. We hope to hunt again, probably in several years, so it's hard to tell what things will be like then.

We also would like to comment on the growing number of so-called hunters who go for the fun of drinking, etc. What kind of people is America producing? No wonder their sportsmanship is so low. This doesn't go for all. We saw and met some very conscientious and wonderful people, too.

We surely enjoy your magazine, *all* of it.—*William H. Nauta, Jr., Thomas W. Nauta; Edmore, Mich.*

HOW TO PLEASE YOUR FRIENDS

I have been taking your superb and outstanding magazine since it began in 1970, when I was fortunate enough to teach school in your fine and nature-filled state. I intend to return to Montana once I finish some additional college.

Montana Outdoors always is an excellent publication and I always read every article with interest and concern. In the past, I have given your great magazine to friends as gifts and I can assure you these friends are very pleased.—*Tom Lofthouse; Carlsbad, Calif.*

editorial

centennial primitive area

Water is the key to life in the marsh. In the case of Red Rock Lakes National Wildlife Refuge, most of the water which forms the complex network of lakes and streams originates high in the Centennial Mountains, far from refuge boundaries and controls. (See the article on the Red Rocks Refuge in the Jan./Feb. 1976 *Montana Outdoors*.)

In 1922, approximately 16,000 acres of land were removed from the public domain by the U.S.

Dept. of Agriculture (USDA) for "experimental sheep grazing." Since, the area has been used continuously by the Agricultural Research Service (ARS) primarily for pasture which supports sheep research at the ARS sheep station headquarters in Dubois, Idaho.

In 1973, the Bureau of Land Management (BLM), which administers approximately 22,000 acres of land adjoining the ARS holdings in the

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Centennials, proposed that its holdings—along with the 16,000 ARS acres—be managed as a primitive area. This required revocation of the executive order which established the ARS withdrawal. Management of the area would fall into the hands of the BLM. The ARS would retain grazing rights, a permissible use under primitive designation.

Although the BLM proposal has received strong public support, it met resistance from the ARS and its parent organization, the USDA. The ARS claims its sheep research can't continue under a primitive designation.

The ARS withdrawal lands form the heart of the proposed Centennial Mountains Primitive Area. They consist mainly of high, subalpine meadows intermingled with timber stands and talus slopes. Wildlife values are high in the Centennial Mountains. Mule deer, elk, mountain sheep, mountain lion and moose are among the resident wildlife.

The undisturbed nature of the area is emphasized by the presence of several uncommon wildlife species. The grizzly bear, a "threatened species" as defined by the Endangered Species Act of 1973, inhabits the area, and peregrine falcons have been spotted in the immediate vicinity. The craggy north faces of the Centennial Mountains provide suitable nesting sites for the endangered peregrine. The endangered northern Rocky Mountain wolf has also been reported in the Centennials, but its presence hasn't been verified.

Emphasizing this point, State BLM Director Edwin Zaidlicz noted, "The most urgent action for the Bureau [of Land Management] and the Department [of the Interior] to take on behalf of endangered species is to designate the Centennial Primitive Area and revoke the Agricultural Research Service withdrawal. . . ."

Although the wild quality of the Centennials is above question, the ARS has no authority to administer land for its primitive values. The ARS is essentially a research agency, developing new sheep diets, sheep breeds, etc.

In addition to its lands in the Centennials, the ARS has numerous other holdings in the area. It controls other withdrawal lands, owns several ranches and has grazing permits on the Targhee National Forest in Idaho and on Atomic Energy Commission lands near Idaho Falls. The approximately 6,000 sheep used by the ARS are owned by the University of Idaho; profits realized from sheep and lamb sales partially support the research effort. The Dubois station is the last such sheep station in the country.

Since the ARS is not a multiple-use agency, it depends on other agencies to handle many kinds of management problems. For example, livestock

management considerations such as predator control and range management lie outside the ARS' capabilities, so it calls on other agencies to assist with problems in these areas. This type of management has been unsuccessful in the past and problems with overgrazing and other forms of overuse persist.

If granted control of the ARS withdrawal lands, the BLM has pledged to cooperate with the ARS to maintain sheep grazing and research. Despite this attempt at cooperation, the ARS and the USDA have continued to oppose primitive designation. The ARS claims it needs motorized vehicles, corrals and lambing facilities—not permissible with primitive designation.

This comes despite admission by Sheep Station Director Clarence Hulet that no permanent structures exist in the area at this time, even though it has operated since 1922. Hulet also said that sheepherders rarely use motorized vehicles in the proposed primitive area.

Since the area in question is used primarily for grazing, it seems relatively easy for the ARS, with its other extensive holdings in the area, to arrange elsewhere any activities conflicting with primitive designation.

Section 7 of the Endangered Species Act of 1973 states that all federal departments and agencies shall take such action as necessary to "insure that actions authorized, funded or carried out by them do not jeopardize the continued existence of such endangered or threatened species or result in modification or destruction of habitat. . . .determined to be critical."

The time has come for the Department of the Interior and the Department of Agriculture to back up the rhetoric of the Endangered Species Act. Designation of the Centennial Mountains as a primitive area will help protect habitat for game, nongame, common and endangered species.

In August 1975, the BLM designated its holdings in the Centennials as "primitive." So, several ranchers, loggers and the Beaverhead Chamber of Commerce filed a suit because they felt resources were being "locked up." The case is now pending, preventing a decision on the ARS withdrawal lands.

Will a complete Centennial Primitive area become a reality for the Bicentennial as hoped? Probably not—unless massive public support makes it possible.

As potential primitive areas become increasingly rare, the Department of Fish and Game recommends careful examination of these proposals. Since primitive designation for the Centennials would benefit wildlife and other values, the department supports such action.—*Hank Fischer* 🐾



The Subdivision Nobody Knew

by Hank Fischer

SOME folks thought recent changes in Montana's subdivision laws would solve the problems of habitat destruction and uncontrolled growth that accompany many developments. But if the Wolf Creek subdivision typifies the trend, fish and wildlife—and thus, sportsmen—are still in big trouble.

Developments such as the one at Wolf Creek, between Helena and Great Falls, graphically depict the shortcomings of current laws and regulations. This subdivision, largest ever in Lewis and Clark County, takes more than the traditional "inch" of wildlife habitat. It sprawls over 9,000 acres of previously undisturbed land. Here, developers, aided by "back-to-the-land" buyers, have pared away an important piece of our wildlife resource.

In the process, developers built low-quality roads on state lands without permission, damaged the watershed, eliminated large tracts of wildlife habitat and changed a way of life for local residents, *all*

without an opportunity for public review or approval.

The development also promises to change land-use options on state land in the Wolf Creek area. Most land in this drainage is arranged in a checkerboard pattern, with alternate sections belonging to the state and the developers.

The development in Wolf Creek could aptly be called "the subdivision nobody knew." Until August 1975, after many of the lots had been sold and the faulty roads constructed, no state or local agency knew anything about it, even though this subdivision was twice as large as any previous Lewis and Clark County development. The comment from several agencies which deal with subdivisions was, "We read about it in the newspaper."

How did this come to the attention of newspapers and eventually state agencies? Through the concern of a hunter for his favorite elk hunting area. He correctly concluded that important wildlife habitat

*Over 9,000 acres of the wildlife-rich Wolf Creek region has been logged and subdivided without public input or comment. Now that the roads are in, much of the land sold and many cabins, tents and mobile homes already there, what will happen to the wild animals and watershed?
F&G photos by Bill Schneider*

continued

was being destroyed.

How does this happen without public notice? The answer is alarmingly simple. If a developer sells his land in parcels 20 acres or larger, he is not regulated by any subdivision law, only by his conscience.

If a developer exceeds the less than 20-acre limit—even by a tenth of an acre—he has *no* obligation to (1) inform *anyone* about his plans, (2) be concerned about fish and wildlife, (3) assume responsibility for sewer, water or roads, (4) consider what local residents think or (5) assess the impact on the community. In short, he alone decides the best use of the land.

Thus, by what often amounts to a few decimal points (20.01-acre lots), the subdivider avoids the law. This often angers wildlife fans and local residents. They resent seeing their backyards turned into second home playgrounds, especially when they had nothing to say about it.

For many ranchers, the roots run generations deep and they are perplexed by the rapid change. One local resident commented, "Things are changing so fast and the effects are everlasting." Begrudgingly, another local remarked, "I guess it couldn't last forever."

Others are more bitter. They see it as the end of their way of life. Some families have lived in Wolf Creek since it was first settled in the late 1800s.

But ranchers were by no means the first inhabitants. The Blackfoot Indians were among the original tenants of this bountiful land. They called the area "place-where-the-wolf-jumped-too." The high cliffs overlooking the creek were once the site of a pishkun, or buffalo jump. The area received its name when a wolf, following a herd of buffalo being driven toward the pishkun, jumped over the cliffs along with the buffalo. Settlers shortened the name to Wolf Creek, which became the name both of this small tributary of the Missouri River and the town which sprang up nearby.

This small town of about 175 persons has been a ranching community since its inception. As one local resident said, "No one paid us much attention except for hunters and hikers until the developers came." Located on the Continental Divide, the Wolf Creek drainage has long been a favorite area for sportsmen from Helena and Great Falls.

How does an area make the transition from a prime wildlife and recreational area to a second home site? Someone has to sell his land. In Wolf Creek, the change came about when Bill and Shirley Hicks found it necessary to sell some of their property. They sold mostly steep, rugged country with little agricultural value. Concerned with how the land would be managed in the future, they first asked the Dept. of Fish and Game to buy their land. But the department couldn't because other land acquisition priorities already existed.

They told MO they were next approached by Reforestation, Inc., a Washington-based land development company which has subdivided over 20,000 acres in Montana. Aware of Reforestation's reputation, they flatly refused to sell. "We didn't

want to sell to that type of outfit," Bill Hicks remarked.

Instead, they listed their land with a local real estate agent who verbally agreed not to sell the land to anyone who was going to develop it. Despite this agreement, the real estate agent sold the land to an Ohio developer. "We were tricked and lied to," Bill Hicks charges. "No one is sicker than we are about what's happening up there. They're ruining the country."

Since the Hickses sold their land near Wolf Creek, the area has become a mecca for developers and speculators, many with out-of-state interests. One needs a score card and a sharp pencil to keep track of all the developers who have shuffled land back and forth in Wolf Creek during the last five years. Developers from Texas, Alaska, Washington and Ohio have all had fingers in the pie.

Reforestation, Inc., the company to which the Hickses refused to sell, eventually gained possession of almost 4,000 acres of Wolf Creek land. The company was in the process of selling the land through the mail, sight unseen, when James Geist and Associates of Great Falls, another Wolf Creek developer, bought Reforestation out. Said Geist, "With them selling through the mail and all, we were afraid of what might happen to our other investments in the area."

Perhaps the most brazen activity undertaken by the developers was construction of roads across state lands without permission. The Forestry Division of the Dept. of Natural Resources and Conservation (DNRC) manages the state land in Wolf Creek. Anyone needs an easement to build a road across state lands. According to Helena Area Supervisor Larry Pyke, "We routinely grant easements when they are found to be in the interest of the State of Montana." Only one of the developers, Geist and Associates, even bothered to apply for easements. None were granted.

Instead, new roads were built and improvements made on other roads on sections of state land. In the process, trees were removed and roads cut into fragile hillsides. "I don't know how we can put a price tag on the damage that has been done," Pyke remarked.

The state sued and was granted a temporary injunction to halt further construction across state lands. But damages may be settled out of court.

Not only were these roads constructed illegally, but also, according to Pyke, "By no stretch of the imagination do they conform to state standards." Most of the roads in the subdivision run along or through creek bottoms, disturbing the stream and causing sedimentation. Overburden from road construction has often been pushed into the creek, in one case entirely blocking the stream's flow. Beaver ponds, which formerly provided good fishing, also gave way to the bulldozer's blade. Steep grades on many of the newly constructed roads exceed the state standard of 6%. One of the roads measured 26%, too steep for a two-wheel drive pickup to negotiate in dry weather. The developers didn't

install any erosion control devices such as culverts, water bars or bridges. New residents must ford Wolf Creek and other streams to reach their lots.

Already, some roads are slumping and breaking up. "They have built four-wheel drive roads, and poor ones at that," Pyke criticized. "Many of them will be washed out, at the expense of the watershed."

The cat skinner who built the roads revealed the reckless instructions given to him by one developer. According to the dozer operator, the developer pointed to a spot on the top of the Continental Divide and said, "Get there!" The grade of the resulting road averaged 17%, and provided access, across state lands, into the headwaters of the Dearborn River. "I knew it wasn't right," the cat skinner admitted, "but there's no way to make a good road in country that steep."

The impact of road building, although substantial, is not permanent. Nature could heal these scars if the roads were put to sleep. However, the cumulative effects of increased human use and accompanying pollution pose a real threat.

State hydrologists and soil scientists who examined the site made dire predictions about sewage and waste from the development. Pointing out the coarse structure of the soil, Pete Bengeyfield, Missoula hydrologist for DNRC's Forestry Division, commented, "Any sewage or waste disposal from dwellings in the bottoms would go into the high water table and not have a very great distance to travel to reach surface waters in the streams." He also noted this problem "could affect the entire Wolf Creek area."

By keeping roads to a minimum, human impact on an area is also lessened, allowing more people the opportunity to enjoy it without destroying it. There's also more room for wildlife in this plan. Aldo Leopold put it this way—"The cycle is too familiar. A gain in quantity often results in a loss of quality."

Construction or improvement of roads often signals an end to quality outdoor experience. Litter and trash accumulate faster than nature can handle them. In Wolf Creek, junked cars and broken-down cabins have already appeared, and the development is young. More cabins and roads will follow. Short-term profit will again supersede long-term use.

The Wolf Creek area justly deserves its reputation for wildlife abundance. It supported a healthy elk herd, deer and a few moose. Locals described meadows in the French Creek area as places where wildlife was always abundant. One joked, "Why in the wintertime you had to be careful when you went up there or else you'd get run over." A maze of roads and homesites now dots these meadows.

Black bear and mountain lion roam the area, as do many smaller animals. "We feel the wildlife resource is as important or more important than any other resource we have there," Pyke emphasized.

How will the subdivision affect wildlife? To answer this best, each species must be considered. Wild animals vary in their amount of tolerance for human activity.

MINI-EDITORIAL

This article said it over and over. People have a *right* to know. Developers *should not* be allowed to operate without public knowledge, regulation and approval. At Wolf Creek—and regretfully, at many other places—the land, the watershed, public coffers, wildlife and people suffered. And nobody even realized what was happening. When we touch the land, we automatically touch the creatures depending on it—including man. It's definitely time to rework Montana statutes to allow everyone to know what's happening to his habitat.

Although the mountain lion has managed to eke out a precarious existence in Wolf Creek, it also falls into the category of extremely sensitive. Mountain lions have large home ranges and development probably has caused the available range to shrink, putting pressure on the big cats.

Department studies show that elk are also sensitive to human activity, especially road building. (See Terry Lonner's article, "Elk and Logging—an Update" in the July/August 1975 *Montana Outdoors*.) Research indicates elk avoid roads, even if they are lightly traveled. Elk will rarely stay where humans are living for extended periods.

Deer—especially whitetails—are more tolerant of human activity, as long as patches of good habitat remain. Deer can't get along, however, with the dogs that many second home buyers often have. Dogs relentlessly chase deer.

Moose, never abundant, may disappear from parts of this developed region. Numerous roads now extend through moose habitat along stream bottoms.

Rather than driving them away, development often lures black bears toward it. Repeated visits to garbage cans earn them the label of "nuisance" bears, and soon the department receives a call: "We don't want the bear shot, but could you please move it somewhere else?" The answer is no. Nearly all areas capable of supporting black bears already do so. It's a case of having a full hotel and then someone decides to take a room.

Many smaller forms of wildlife also suffer when their habitat is encroached upon or polluted. Black-capped chickadees, long-tailed weasels and long-toed salamanders all feel the crunch.

Destruction of fish and wildlife habitat isn't the only problem at Wolf Creek, however. A spokesman from the Dept. of Revenue complained, "Subdivisions like the one in Wolf Creek are a real headache for us. We know they're building cabins up there, but if the lots are over 20 acres they don't have to file their deeds with the state, so there is no record. That means we have to go up there and check each lot. Many people get away with paying a lower rate just because we don't know they're there."

One of the developers devised another system for dodging higher taxes. By advertising the parcels of land in the subdivision as ranchettes, the developer

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retains grazing rights on the land. The buyer faces cattle and cow pies in his front yard—until he chooses to build an expensive fence to keep the stock out. This setup allows an “agricultural” assessment—even though it is a recreational subdivision. The Wolf Creek development has minimal agricultural value. It supports about one cow per hundred acres, according to the tax assessment of the Dept. of Revenue. Thus, the developer scores in three ways—he (1) sells “ranchettes,” (2) grazes his cattle for free on land he has already sold and (3) pays a low tax rate.

If assessed as agricultural land, the developer pays about nine cents per acre per year. If properly assessed as recreational, the tax would be approximately seven dollars per acre per year. In one year, on 3,000 acres, the difference amounts to over \$20,000.

Taxpayers and buyers both face the problem of forest fires. Already termed by Pyke “the biggest area of concern in the Helena fire district,” more people only worsen the problem. Pyke called the development site “a tinderbox.” He added, “I hope people realize the risk they’re taking by building there.” But of course, they don’t, anymore than they realize the inappropriateness of living there in the first place.

Pyke explained the Wolf Creek area is arid and part of a “lightning belt.” The area has a long history of forest fires, including several in recent years. In 1973, a 764-acre fire in Allen Creek cost \$110,000 to extinguish. In 1974, a 75-acre fire on French Creek started in the subdivision and burned mostly on state land. This man-caused fire cost the state \$30,000 to put out.

But the most damaging aspect of the subdivision is visible only by looking 40 or 50 years ahead. Once committed to development, land rarely reverts to its natural state. It’s a one-way street where wildlife generally gets run over.

While the effect on most wildlife is usually long-term, the impact on local residents is always so. One old-timer recounted his days in Wolf Creek with a sad smile. “When I first came here,” he said, “the place was wild and free. Only one person other than myself lived on the creek. Game was plentiful and the hunting was good. Course that’s all changing now.”

For many residents, it marks the start of a slow degradation in that intangible thing we call “quality of life.” The roar of motorcycles gradually replaces the rushing of the stream. The roots which families have put down for nearly a century begin to shrink and dry up. A small culture is destroyed and society at large is somehow diminished.

The real tragedy is that all of this happens without the consent, and at times, even the knowledge, of those who are affected. But what can be done?

For starters, subdivision laws should *not* contain the less than 20-acre limitation. The acreage size

should be eliminated, since any land division involves a change in land use and thus should be a matter for public record and review. Most state and local officials who work with subdivisions recognize this as the major flaw in Montana’s law.

The developers deserve part of the blame—but not all of it. Those who buy the land must share the blame.

Money-minded developers work in a market situation; without buyers, they can’t do business. Some developers are sincere in their desire to see that the land, once developed, is well cared for. But developers seldom ask, “Is *any* development appropriate for the area?” Instead, they ask, “*How* can we design a good development here?”

Why do people buy second homes? Many people still retain a deep-seated desire to be close to the land. Although this valuable remnant from the past may eventually be our salvation, at this time it is a plague. As Montana becomes more crowded and “quality of life” more elusive, people grasp furiously for the most important, real parts of their lives.

For many, this will be the last stand. They plan to get a few acres, call it their own and take care of it. And wildlife is a part of “God’s Little Half-Acre.”

“It’s a beautiful place, we can live right among the wildlife,” one buyer said. *If* only wild animals “liked” humans as much as we liked them, *if* only things were the way Walt Disney told us, then human beings and animals could go tripping through the forest, hand-in-paw, and subdivisions wouldn’t be a problem.

Unfortunately, the buyer overlooks reality. Everyone can’t have a place in the country or “the country” will disappear. And this problem promises to worsen in the future. The myth of wanting to have a place “to get away from it all” no longer holds up. As one observer noted, “Most of these subdivisions are just cities in the woods.”

Although we certainly may envy our forefathers, we can no longer afford to emulate them. Regretfully, that time has passed.

We are at a crossroads when the public will have to make a choice—wildlife or second homes. When human activity in our wildlands reaches certain levels, some forms of wildlife disappear. As we take, wildlife gives.

And it has given a good deal. According to the Environmental Information Center, a Helena-based statewide citizen group, over 500,000 acres in Montana have been subdivided. Many developments are still half empty. Nevertheless, developers march on to more beautiful and remote areas. And the buyers follow. The Pied Piper never had it so good.

While developers march into undisturbed areas, wildlife disappears. Much like the Indians driving the buffalo over the cliff, subdivision does the same thing for many kinds of wildlife. Push, push and then eventually over the edge.

There oughta be a law. 🐾



Peregrine falcons. Painting by Montana artist, Ron Jenkins. © The National Wildlife Art Exchange, Inc. 1974. All rights reserved.

our
endangered
species:

The Peregrine Falcon

by Dennis Flath

Billed as the “fastest bird in the world,” the peregrine falcon reaches estimated speeds of 150-200 miles per hour. Such full-throttle power dives enable the peregrine to capture other birds in flight. But the speedy falcon isn’t fast enough to escape threats to its very existence—primarily pes-

ticide contamination interfering with its reproductive success, but also human encroachment into its habitat and competition with other species for food and nesting sites.

Peregrine falcons are about the size of crows, with a 3½-foot wingspread. Heavy black “mus-

taches” help identify them. The adult sports a slate-colored back with bars and spots on a pale breast, while a younger bird appears brownish and has a striped breast.

Like other falcons, peregrines feed primarily on other species of birds. Falcons are hawks with

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noticeably pointed wings and a "shallow" wing beat. Many forms occur throughout the world, with five species in Montana. One of these, the gyrfalcon, is an arctic bird which only visits Montana as a casual winter straggler.

The peregrine falcon (*Falco peregrinus*) inhabits all continents except Antarctica. Because of its speed, grace and spectacular aeronautics, the peregrine is highly valued for falconry. Falconry, the sport of hunting with trained hawks, began about 2000 B.C. in central Asia. By 1000 A.D., the sport was widespread in Europe. In those early days, the peregrine was traditionally reserved for the pleasure of the nobility.

LIFE HISTORY

Expansive areas for hunting and remote, rugged nesting sites typify the peregrine's habitat requirements. Eyries (nesting sites) are usually situated on cliffs 200-300 feet high, although peregrines have been known to use cliffs from 40-2,100 feet high. Mountain valleys and river gorges with precipitous cliffs provide favored eyrie sites. Peregrines occasionally nest on skyscraper ledges in cities or in nests of other birds such as red-tailed hawks and eagles.

Peregrine eyries usually provide a spectacular panorama of the surrounding countryside. In addition to the panoramic view, the nesting place must also provide ledges and crevices for roosting sites. A sheltered spot for the nest itself is of utmost importance.

Peregrines take most of their food within 10 miles of the nesting place. Since peregrines feed primarily on waterfowl, shore birds and some passerines (perching birds, such as magpies, jays and robins), the most important hunting areas are wetlands, meadows, croplands, lakes and bays. (The habit of feeding on waterfowl has earned the peregrine the name of "duck hawk.") Not only do such places harbor favored prey species, but they also provide ideal hunting areas over which pere-

grines place their potential prey at a distinct disadvantage by maneuvering them into open areas.

The peregrine captures its prey by striking at it in midair, then following the stricken prey to the ground or occasionally catching it in the air. Peregrines strike from above, by going into a high speed dive known as a "stoop." Often a pair of peregrines cooperate in hunting endeavors. One falcon will flush and chase potential prey into a vulnerable position, while the second falcon waits above for an opportunity to make a stoop.

The eyrie is the epicenter of peregrine activity during the nesting season. Courtship activities—including mutual roosting on the cliff, cooperative hunting and courtship flights and feeding—begin here long before eggs are laid.

Before egg laying, the female constructs several "scrapes" or depressions capable of holding eggs. She builds the scrapes in loose soil, vegetation or prey remains. One of these scrapes will provide a nest, usually on an open, exposed ledge, screened by rock or shrubs. A pair of peregrines may have from one to several alternate nesting sites in the same area, so the exact location of the nest may change slightly from year to year.

Peregrines normally lay from two to four blotchy, brown eggs. In the Rocky Mountains, average clutch size was generally four eggs, but in recent years average clutch size dropped to three eggs. If eggs from the first clutch are lost or taken, peregrines often produce a second set of eggs. In fact, renesting is quite common, although second clutches are usually somewhat smaller than first.

Incubation lasts from 32-34 days, with the female performing most of the duty. Peregrine hatchlings are altricial (helpless) and must be cared for and fed by the parents. When the young are 40-50 days old, they leave the

nest, but continue to depend on the adults for food and protection for several weeks.

Peregrines in captivity have lived over 18 years. In the wild, however, the life span probably does not exceed 12 years. Based on band recoveries, ornithologist James Enderson estimated an annual mortality rate of 70% for immatures and 25% for adults. His information came from the eastern U.S. and clearly indicates a sharply declining population. Juvenile mortality normally exceeds adult mortality, since young birds are less adept at obtaining food and keeping themselves out of trouble.

THE PEREGRINE DECLINE

Shortly after World War II, populations of peregrine falcons crashed in both North America and Europe. Scientists in many countries detected declines in reproductive success and drastically reduced eyrie occupancy. Many scientists initially felt that declines were local and temporary, but after several years, it became clear that this was a large-scale population decline.

The sharpest drops in peregrine populations occurred during the 1950s. In the United States, scientists first noted this decline in the northeast. In the Hudson River Valley of New York, nine breeding pairs were present in 1947. These birds averaged about 0.75 young reared per active site, a decline from the 1.1-1.2 average of pre-World War II years. Productivity and eyrie occupancy declined, with the last young falcon raised in 1951. Apparently, the last adult disappeared about 1961. In Wisconsin and along the upper Mississippi River, the decline was noticeable in 1959 and the last resident adult was seen in 1964.

The story was the same elsewhere. In Massachusetts and Pennsylvania known eyries consistently produced young into the early 1940s. Then, productivity fell and eyries were abandoned. Eventually, no peregrines could be found.

By 1962, scientists felt that not a single young peregrine had been raised in the northeastern states that spring. And by 1963, it was evident that a survey of the situation in the eastern states was badly needed. Ornithologists Daniel Berger, Charles Sindelar and Kenneth Gamble surveyed 133 formerly used peregrine eyries during the latter part of the 1964 nesting season. None were active. This finding, coupled with the decline of European peregrines, clearly indicated the peregrine falcon was in serious trouble.

In the Rocky Mountains, ornithologist Enderson followed the decline of the peregrine closely. In 1964, only slightly over one-third of the known eyries from New Mexico to central Alberta were used. At that time, about 25 pairs were thought to be nesting in Montana. In 1972, Enderson found seven active eyries in Montana, but has found none since. So the fact is—nobody knows whether any peregrines are nesting in Montana right now.

The peregrine's decline has been attributed to a complex of factors which, independently, probably would not cause a widespread reduction. But cumulatively, these factors are proving fatal to the species. The only factor which provides a common denominator to peregrine declines *and* which has influenced productivity since World War II is widespread use of DDT and other organochlorine pesticides.

Regarded as a cure-all for the insect pests that have plagued man since the beginning of time, DDT was produced in mass quantities and dumped into the environment with little regard for secondary or long-term effects. The world biosphere may contain over 1 billion pounds of DDT (according to Julian McCaull, "Questions for an Old Friend," *Environment*, Vol. 13, No. 6, pages 2-9, 1971). The compound is persistent and omnipresent. In 1966, DDT and its metabolites DDE and DDD were found in livers and fat specimens from Adelie penguins in Antarctica,

even though the Antarctic has never been sprayed. Clearly, this chemical arrived there by natural distribution. And in Sweden, analyses show that up to 3,300 tons of DDT or its metabolites exist in the soil, more than twice the quantity used in Sweden in the last 20 years. Swedish peregrine populations declined by 79% in a 10-year period. By 1965, only 13 pairs were counted, 6 of which bred successfully.

No doubt, DDT and other chlorinated hydrocarbon insecticides have been of some benefit to man. But their persistence and tendency to progressively concentrate in animals at higher levels of the food chain have produced subtle and insidious effects on many forms of wildlife. Some effects may not have been detected yet.

In the peregrine, DDT and DDE affect the action of certain sex hormones. These hormones control the reproductive process, including mobilization and secretion of calcium which forms the eggshell. DDT and DDE cause the peregrine to secrete subnormal amounts of calcium and the result is a thin-shelled egg. The eggs may break during incubation, be infertile or produce young which soon die of pesticide contamination. Reproductive success falters—and populations start downhill.

Pesticide contamination is not the peregrine's only problem. Researcher Morlan Nelson has pointed to long-term changes in peregrine habitat which may have affected distribution and reproductive success. He suggests that climatic changes in the West since 1876 have resulted in a warmer, drier environment. With reduced water, levels of some marshes and lakes have fallen considerably, thus decreasing the number of waterfowl and shore birds, the peregrine's prime prey. However, a thorough study on the effects of climatic changes has not been conducted, so Nelson's theory remains conjectural.

Human encroachment on peregrine nesting territories and hunt-

ing areas also contributes to the falcon's decline. This encroachment is frequently disguised as "progress." Such activities (i.e., energy development, subdivisions, highway development, mining, etc.) not only harm the peregrine, but also often contribute to ecological instability. As a result, all wildlife suffers. An excellent example of this is the drainage of thousands of acres of wetlands used by the peregrine and hundreds of other animals.

Human depredations and interference, disease, food availability and competition with prairie falcons for eyrie sites have also played a role, albeit a lesser one, in the peregrine's decline. One thing is certain: The combination of all the foregoing factors is simply too much for the peregrine to handle. The "endangered" status of the peregrine falcon is an established fact.

THE PEREGRINE'S FUTURE

For years, biologists dedicated to peregrine conservation have tried to solve unsolvable problems. Some management measures might slow the decline, but these would not solve the problem entirely.

The monitoring program for Rocky Mountain peregrines conducted by Enderson continues to show a decline in the number of breeding pairs. Known eyries are checked every year in the Rockies. In 1973, 14 pairs produced 3 young; in 1974, 10 pairs produced 14 young, and in 1975, 8 pairs produced 8 young.

Some previously stable arctic populations are now showing a sharp decrease in eyrie occupancy. For example, Alaska's Colville River population is headed downhill rapidly. Other arctic populations are remaining stable—just barely.

Although some peregrine arctic populations are not yet in such desperate straits as those in more temperate areas, the overall situation is discouraging. One thing is sure: The picture in the Rockies is bleak, and the prognosis for the peregrine falcon is grim. 🐾

PRIVATE FORESTRY

—trees are like any other crop—

by Hank Fischer

WARREN and Addie Kiss own a small 80-acre ranch about 12 miles south of Helena. Like many people, they were feeling the crunch of inflation in 1974 and decided to sell some of the timber on their property. Instead of consulting a state forester for some information (free) or hiring a consulting forester to handle the sale, they looked in the phone book and found the name of a local logger. The logger cruised their timber and told them he had some bad news. Their timber had "bugs" and its value was reduced. He then told them the timber would be suitable for railroad ties, so he'd buy it. They were relieved.

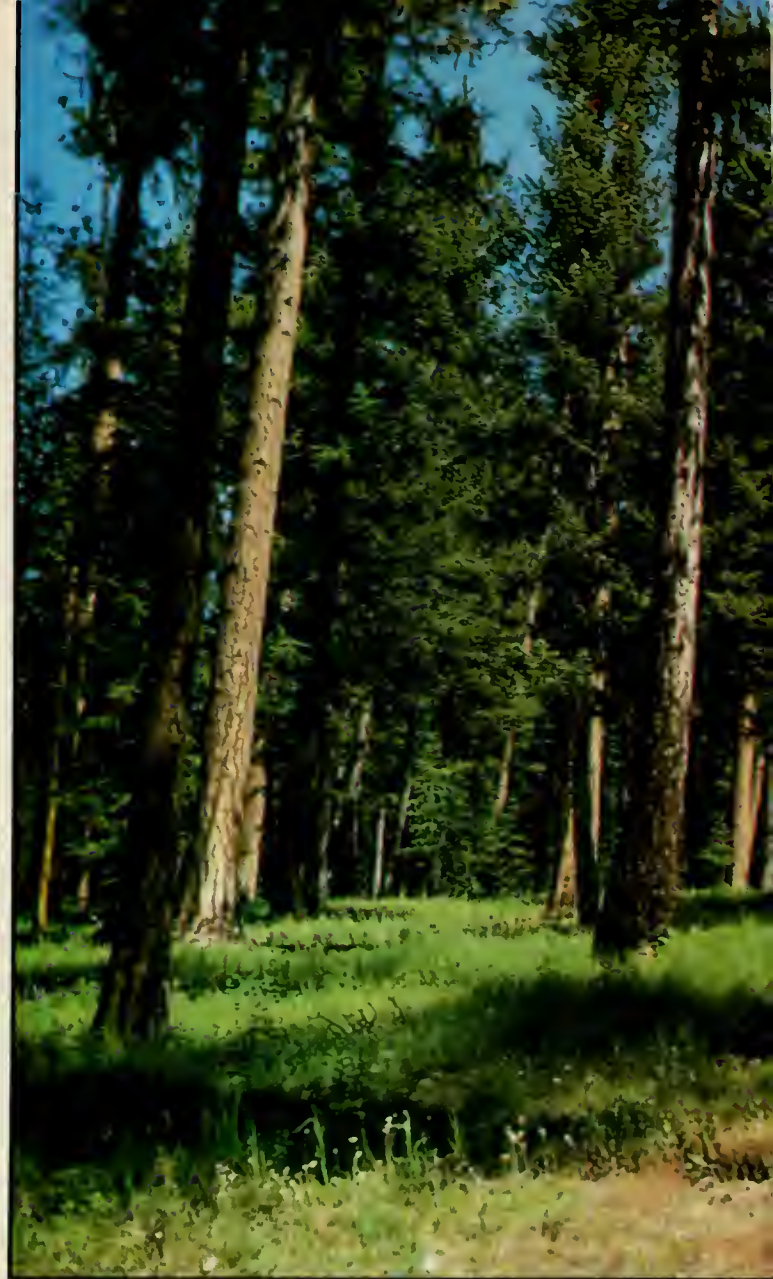
They asked the logger about a contract. He told them he would take care of it—it would save them money. A few days later the logger arrived with a contract, already notarized. The logger explained he just wanted to save them a trip into town. "We really thought he was a nice man and signed the contract," Mrs. Kiss recalls. The contract had no provisions for (1) how the timber would be harvested, (2) how long the job would take or (3) cleanup or replanting. In short, it contained no regulations to protect the land. Furthermore, the contract did not specify how many board feet would be harvested. Instead, it said "all the timber."

Although the stage was set, the tragedy was yet to be played. "From the start we thought the job looked bad, but we didn't say anything," Mrs. Kiss remarked. "We figured they knew what they were doing."

"But then," she said, "anybody could see they were tearing up the place. They put in terrible roads and dropped trees on our fences. That man rode his cat around like a kid on a tricycle with a tantrum. What they didn't cut, they knocked over. In most places, the only trees they left were the small, unhealthy ones they couldn't make any money on."

"We couldn't fire him since we didn't have an adequate contract, so we had to watch while he ruined our property," Mrs. Kiss concluded. "It isn't worth half what it was before. Not only that, but people who have been out here since say he took a lot more timber than he told us. And a state forester said we didn't have a bug problem at all."

Although they may not have had a bug problem before, they may have one soon. Pine beetles, which breed in green slash and then move into live green



trees, thrive in areas of concentrated slash such as the Kisses now have. The Forest Service (FS) has already voiced concern for the national forest lands that lie directly adjacent to the Kiss property because once a bug infestation breaks out, it can spread rapidly—one small example of how logging on private land affects public land values. Other effects include adverse impact on fish and wildlife and clean air and water.

While public lands have received abundant attention in recent years, private forest operations have gone essentially unnoticed and almost completely unregulated.

Does the apparent lack of concern with private forests mean they aren't important? Edward P. Cliff, former FS chief, said in 1969, "The future of forestry rests on land in private ownership." Seven years later, it is clear that private forest lands hold the key not only to future timber supply, but also to survival of much of our wildlife and fisheries.



F&G photo by Bill Schneider

Private timber is vital to the logging industry, nationally and in Montana. Montana contains 17.3 million acres of commercial forest land, more than any other Rocky Mountain state. Over 28% of this commercial forest—4.9 million acres—lies in private ownership. Private forest holdings have the potential for the greatest productivity since they contain much of the choice timber. Not only are most private holdings accessible, but also they are often located on the more stable and productive sites. Gentle slopes and deep soils decrease environmental damage associated with logging.

Historically, private forests in Montana have always been important. According to state forestry officials, these lands supplied most of Montana's timber until World War II. Prior to this time, timber from public lands (federal and state) supplied little of the annual harvest. However, World War II brought larger timber needs and the heavily cut private lands could not meet the demands. So, national forests and Bureau of Land Management (BLM) lands became

increasingly important and were heavily cut in the late 40s, 50s and 60s. Now, with increased pressure on federal agencies—primarily the FS—to live up to their multiple-use mandate, the pendulum is swinging back toward private lands.

Recent figures from the Division of Forestry, Montana Dept. of Natural Resources and Conservation (previously the state forester's office) support this. Before 1974, private forests supplied from one-fourth to one-third of Montana's total cut. (Remember, about one-third—28%—of Montana's commercial forest is private land.) In 1974, private lands supplied almost one-half of Montana's total timber harvest. Or, *less than one-third of the land supplied one-half the timber*. This has caused several professional foresters to state that private lands are probably overcut.

These figures also indicate increased regulation of public lands has influenced the logger to look to private lands, where regulations increasing logging costs and professional forester involvement are practically nonexistent. Many experts agree that the nation's best hope for expanding domestic timber production—and removing pressure from public lands—lies in improving management of the millions of private forest acres.

Generally, the more timber private lands produce, the more consideration wildlife will receive on public lands. But, if this trade-off comes at the expense of the thousands of acres of private forest land, it seems like a poor bargain.

Although many loggers in Montana do quality work without regulation, others don't, and problems result for both the landowner and the public.

Among other things, poor logging involves (1) leaving only cull and genetically inferior trees to regenerate the forest, (2) inadequate consideration for future productivity and (3) roads constructed on fragile sites at steep grades where they may later slump and erode. Overburden from road construction often ends up in streams and culverts and other erosion control devices are rare. Silt-laden streams, unfit for fish, often result. Token slash disposal can leave six-foot blankets of treetops and unmarketable timber, impenetrable to many animals.

What about replanting? A state forestry official laughed at this question and said he could probably count the acres planted or seeded for timber products on nonindustrial, private lands in the last five years on both hands. The Montana State University Extension Service in Bozeman estimates 644,000 acres of private land *should* be replanted. Harvesting practices seem to emphasize cutting the best trees and leaving the poor, unmarketable trees to reseed the logged area: Conscientious foresters recognize this creates genetic disaster.

The slogan, "Wood—America's renewable resource," often appears on bumper stickers and in advertisements. But the slogan overlooks the fact that wood is a renewable resource—within a

continued

reasonable length of time—*only with proper forest management.*

The importance of private forest land to the future of the wood products industry in Montana and the entire nation is steadily increasing. Only far-sighted management will insure the future of this vital industry. Wood possesses a natural and environmental edge over many alternative materials. Not only renewable, it is also biodegradable, reusable, recyclable and has a low-energy demand. While it takes 3,780 kilowatt hours to manufacture a ton of steel and 20,160 kilowatt hours to produce a ton of aluminum, a ton of lumber requires only 450 kilowatt hours. Despite all of the advances of technology, wood remains the most environmentally sound building material.

Private forest lands supply more than timber, however. They are also important for fish, wildlife, recreation and clean air and water. These are *public* values, and thus are the concern of all Montanans—not just private landowners.

Admittedly, many private landowners have neither a great deal of knowledge about forestry, nor do they recognize the value of a good timber stand. Pressure from other uses may also be a factor. For example, high grain prices have forced ranchers to look for supplemental food supplies for their stock. Land clear of trees means more grass, right? Wrong—certain sites will be nearly unproductive without trees because they provide shade and trap moisture. Forest and range studies indicate a 30% tree cover may be optimum for forage production on many forest sites.

Why would a landowner do anything to harm his land? Purposely, few would. But not many landowners log their own land. Usually a hired logger does the work. Too often, landowners assume loggers must abide by standards. They fail to realize that if they don't draw up a contract, the logger doesn't have to follow any rules.

It seems, then, the finger should be pointed at the logger. This is too easy, however. Loggers operate in a market where keeping streams clean and preserving wildlife habitat brings no financial reward. To survive in a depressed market, some loggers find it necessary to "cut corners." This, in turn, puts the economic squeeze on the loggers who are trying to do a good job. With all loggers not operating under the same "rules of conscience," scrupulous loggers sometimes lose.

Lack of logging standards for private lands has caused headaches for many landowners. The Kisses are only one example. Bad logging affects the public in other ways, too.

One example occurred in 1974 on Hyalite Creek near Bozeman. Here, logging by the Yellowstone Pine Co. on Burlington Northern (BN) land probably contributed to a massive mud slide that deposited over 200,000 cubic yards of soft clay into Hyalite Creek, part of Bozeman's municipal water supply. It also had a disastrous impact on the fishery. According to an official from the Water Quality

Bureau of the Montana Dept. of Health and Environmental Sciences, the mud slide produced a very fine silt, which turned the whole reservoir brown. Controversy later surfaced as to whether the logging operation caused the mud slide. Loggers complained that numerous natural landslides had occurred here over the years. With such prior knowledge, one can only wonder why this land was logged at all.

A new controversy involving Yellowstone Pine Co. logging operations on BN land arose in 1975. This time, the Taylor Fork of the Gallatin River was the site, and landslides again caused the problem. Logging operations contributed to the natural landslide problem, making the Taylor Fork a poor fishery and a serious polluter of the Gallatin.

The effect of logging on wildlife, although substantial, is often difficult to quantify. Much like subdivisions, small private logging sales, improperly handled, represent an "inch-by-inch" encroachment. To obtain an accurate picture of the effect of logging on wildlife, one must consider individual species in specific areas. John Firebaugh, department fish and wildlife biologist in Hamilton, recently explained to MO how logging, on both public and private lands, affects elk in the Bitterroot Valley.

According to Firebaugh, the impact of logging varies greatly on opposite sides of the valley. "Because of exposure, soils and moisture differences, the west, or Bitterroot, side of the valley has a greater tree density," he said. "Cover isn't normally a limiting factor—the amount of available winter forage usually is." Firebaugh mentioned that logging along the west side of the valley occasionally benefits wildlife if the stimulated forage is available during the winter.

"However," he continued, "the benefits of having more open spaces are often outweighed by the impact of the roads which accompany timber sales. Roads and the activities associated with them cause real problems for elk. They disturb movement, open up escape cover and increase hunter access."

While the Bitterroots generally have thick timber cover, Firebaugh pointed out that winter ranges along the drier Sapphire Mountains on the east side of the valley have many open, grassy slopes. "Here," he said, "the quality of cover is all important, in some places more so than food." He explained that many of the elk wintering in the Sapphires rely on small timber pockets for escape cover and protection from predators and the elements. He summed up by saying, "When these small pockets of timber are cut, it often has a serious impact on the resident elk."

According to Firebaugh, the length of elk hunting seasons in the Bitterroot has decreased over the last 10 years by nearly 50%. "In my view," he said, "this is due mainly to increased access provided by logging roads. These roads allow access into areas where the elk previously could escape. It results in a quick harvest when weather conditions are right

that, in turn, makes for short seasons. Although I would hate to see it happen, some areas could be forced to move to a permit system, if the trend continues." This would severely limit the choice of places where sportsmen could hunt.

What all this controversy over private forests boils down to is need for a good forestry practices act. Montana lags far behind neighboring states in legislation protecting this important resource. Oregon, Washington and Idaho all have acts designed to safeguard their private forests. In 1973, California passed an act that set a new standard for protecting private forests.

Concern for private forests has also been expressed on a national level by the Environmental Protection Agency (EPA). The EPA considers logging an important source of "non-point" pollution (pollution from agricultural and forestry lands) and drafted a model forestry practices act. At this time, it is only "suggested legislation." EPA water pollution experts feel development of state forestry practices acts should be considered as the principal method for regulating forest water quality. However, if the EPA expects to fulfill its goal of zero water pollution by 1985, federal intervention might be forthcoming.

In other words, if a state act isn't adopted, Montana could soon find itself conforming to federal standards. Although a federal act would be better than no regulation at all, drawbacks of a federal act are obvious. Much like land-use planning, federal forestry standards often neglect local variables. Different soils, different climates, different types of wildlife, different landowner objectives—these are inherently ignored by federal regulation.

Oregon has had success with its innovative approach to regulating private forest lands. Rather than setting specific regulations, where possible it adopted "minimum standards" which are maintained under penalty of law. The attitude of the act was, "We're not concerned with the methods, just so it's done right." The minimum standards apply to such logging procedures as harvesting trees, road construction, reforestation and slash disposal.

Critics of the "minimum standards" approach blast it for weakness and failure to halt poor forestry practices. They call for more stringent legislation, such as that adopted by California. Among other things, the California act calls for individual timber plans submitted by registered professional foresters. Although the timber industry has termed it "stifling," those concerned with wildlife and protecting the timber resource say the California approach is the ultimate answer.

Although a forestry practices bill could solve many problems, it is not a complete solution. In fact, Montana's current tax structure discourages private landowners from making a long-term investment in timber.

Roger Bergmeier, supervisor of the Cooperative Forest Management Program for Montana, explains

PRIVATE LANDOWNERS— IF YOU PLAN TO SELL YOUR TIMBER. . .

1. Have a good contract that protects you and your land, containing at least the following points:

- amount and species to be sold,
- where the timber will be cut, (A sale map will help.)
- how the trees to be cut are designated, i.e., marked with paint, diameter size or clearcut by delineated areas,
- period of time over which logging will be completed, including periods when cutting would not be allowed,
- kind and amount of road development needed, including culverts or bridges,
- how the timber will be measured, by whom and at what point,
- who will clean up the slash and who will pay for it and
- utilization specifications including (a) top diameter, (b) stump height, (c) minimum length of log to the prescribed top diameter, (d) amount of cull material in the log before it should be scrapped, (e) use of dead and/or down material for pulp and other products.

2. Consider use of a cash performance bond. This requires the logger to put up money which is forfeited if he defaults on the contract.

3. Administer your sale, either by yourself or with a consulting forester. No matter how good your contract, you must still make sure it is adhered to and any damages or violations stopped before they get out of hand.

4. Advertise the sale of your timber. Its true value is what the high bidder is willing to pay.

5. Know your bidders. Reserve the right to accept or reject any or all bids. Ask for references from an operator's previous contracts. If necessary, look at his past jobs.

it this way—"The growth of a tree is slow at first. It may take 10-20 years to develop a good crown and root system and really start growing. A tree will usually grow its fastest from about the age of 20-80 years, and it is increasing in volume growth quickly, which means more money for the landowner. The way our taxes are now, just when a tree starts to grow its best, the landowner gets hit hardest with taxes. If he doesn't have sufficient income from another source to pay taxes on the timber, he often has no choice but to cut it. This, incidentally, lowers the tax on the land and timber, sometimes into a much lower grazing classification."

The landowner must pay higher taxes while his trees are growing and he also risks losing his investment if he has a fire or insect infestation. One possible solution would be the private landowner paying a tax on the timber *when it is cut*. This action would regard trees as a "crop," with taxes paid at harvest. As Bergmeier commented, "Trees are like any other crop. You don't pick tomatoes until they're red, and you shouldn't harvest trees before they are mature, except for thinning or insect and disease control."

A good forestry practices act would not only benefit wildlife, but also maintain other forest values, save money and assure private landowners of satisfactory work when they hire loggers to harvest their timber. ■

save our wetlands



**National Wildlife Week
March 14-20 1976**